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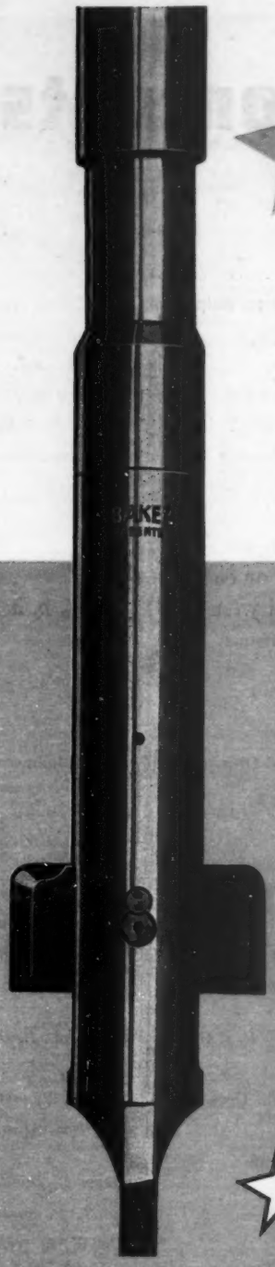
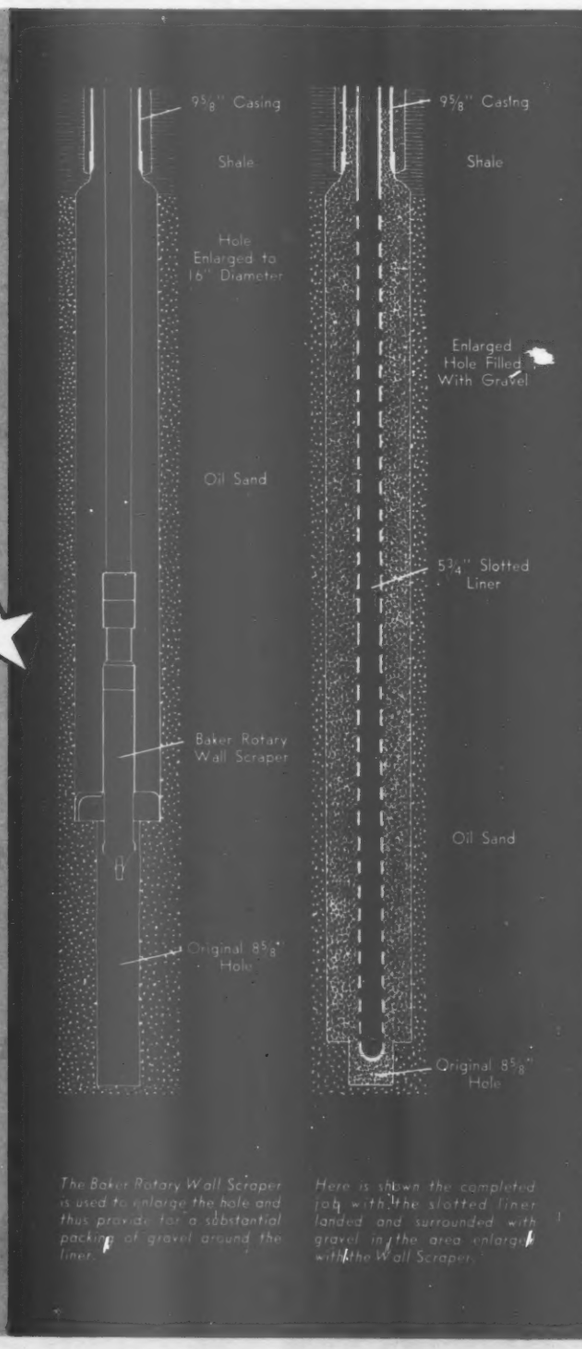
ENLARGING THE HOLE FOR GRAVEL PACKING

One of 12 Practical Field Applications for the BAKER ROTARY WALL SCRAPER





The Baker Rotary Wall Scraper is used to enlarge the hole and thus provide for a substantial packing of gravel around the liner.

Here is shown the completed job with the slotted liner landed and surrounded with gravel in the area enlarged with the Wall Scraper.

Send for Baker Broadcast No. 19

BAKER ROTARY WALL SCRAPER

BAKER OIL TOOLS, INC.
P. O. Box 127, Vernon Station
LOS ANGELES, CALIFORNIA
HOUSTON, TEXAS
NEW YORK, N. Y.

The BAKER ROTARY WALL SCRAPER...

Provides a safe, efficient means of enlarging the walls of an open hole to a diameter considerably greater than the casing or hole through which the tool is run.

REMARKABLE REAMING CAPACITY

One of the outstanding features of the Baker Rotary Wall Scraper is its remarkable reaming capacity in relation to the O. D. of the tool. It has a maximum expansion range on the blades of from 4" to 36".

SAFETY

The safety of this tool has been ably demonstrated in the thousands of successful runs made in oil fields throughout the world under most adverse operating conditions.

TWO TOOLS IN ONE

WALL SCRAPER — 2 TOOLS IN ONE — WALL SAMPLER

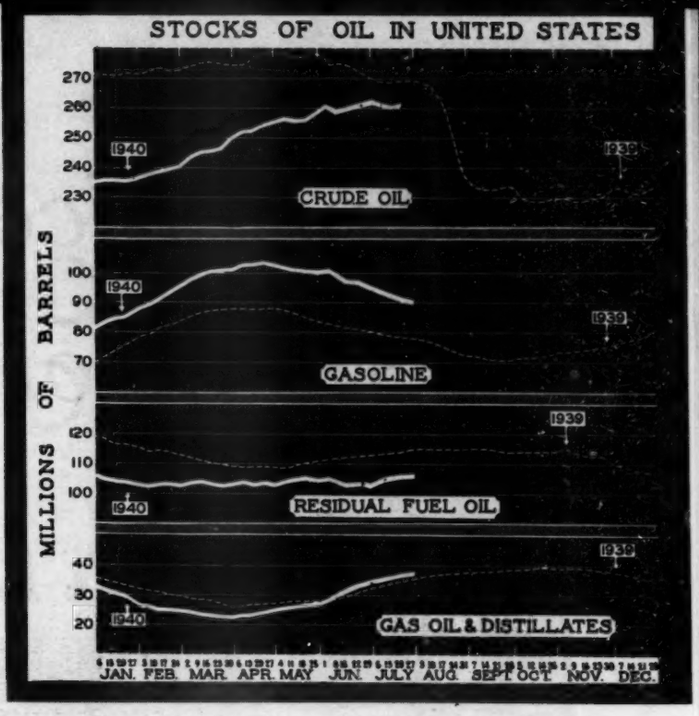
The Baker Rotary Wall Scraper is really "two tools in one" since by merely substituting Sampler Blades for the regular Scraper Blades the tool is converted into a Baker Rotary Wall Sampler . . . an exclusive Baker feature. With this device it is possible to take actual cores from the side walls of any uncased hole at any depth.

Important Applications

Enlarging Holes for Casing
Cleaning Up Oil Sands
Setting Liners
Setting Cement Plugs
Bottlenecking for Cement Jobs
Removing Sections of Drillable Pipe
Water Shut-Off Tests
Sidetracking
Straightening Holes
Fishing Jobs
Enlarging Holes for Gravel Packing
Side Wall Sampling (by converting Scraper into Baker Wall Sampler)

Trends

Opposing Trends In Domestic and Export Panorama



FURTHER losses in export markets and continued readjustments in domestic operations pointing to more favorable marketing conditions, were opposing developments of the past week. Action of the Government in requiring licenses in the movement of specified petroleum products to foreign countries and the denial of clearance on cargoes of petroleum to Spain and Japan, in boats of American registry, assure a further restriction of oil exports from this country already at the lowest point in many years.

CRUDE PRODUCTION *3,688,394 bbl. daily average—up 111,522 bbl. One year ago 3,836,753 bbl.*

CRUDE STOCKS *261,596,000 bbl. as of July 20—up 102,000 bbl. One year ago 268,447,000 bbl.*

GASOLINE STOCKS *90,173,000 bbl. as of July 27—down 1,616,000 bbl. One year ago 78,238,000 bbl.*

RESIDUAL FUEL-OIL STOCKS *105,924,000 bbl. as of July 27—up 60,000 bbl. One year ago 115,067,000 bbl.*

GAS OIL AND DISTILLATES *38,981,000 bbl. as of July 27—up 1,477,000 bbl. One year ago 34,782,000 bbl.*

REFINERY RUNS *3,555,000 bbl. daily week ended July 27—up 15,000 bbl. One year ago 3,460,000 bbl.*

The action in regard to Spain removes to a large extent the one remaining market of continental Europe of importance to this country. Eliminating the British Isles, the U.S.S.R., Rumania and Germany, the peacetime European market totaled approximately 350,000 bbl. daily, part of which was supplied from this country. Through war restrictions, this large market has been practically eliminated from world oil trade. This situation presumably will not change materially so far as this country is concerned as long as the war continues. Another important European development of the week was the nationalization of French and British oil supplies in Rumania and the completion of arrangements to make this production available to Germany. The Reich's petroleum consumption will still exceed its supplies with Italy drawing on storage for practically all of its oil demands.

It was impossible the first of the week to determine the full significance to California of the Japanese embargo. It was believed that it would mean a loss of the greater part of that state's most important export outlet which would necessitate further downward adjustments in the production of fields and refineries on the West Coast.

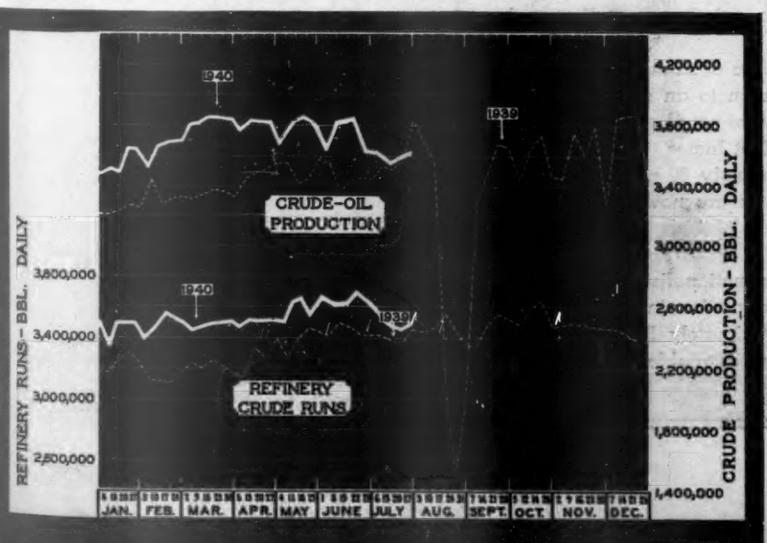
In domestic operations current statistical data covering production and consumption are encouraging. Crude runs to stills for the week ending July 20 were 150,000 bbl. daily under the average for the week ending June 22, the high point of the year.

The crude situation also has its strong points despite the uncertainty and loss of markets brought about by the export development. While the decrease in national crude-oil stocks reported up to July 20 has not been large, the declines in several areas have been substantial. The decrease in Texas for the first 3 weeks of July averaged 125,000 bbl. daily. This has served to strengthen several weak spots in the state.

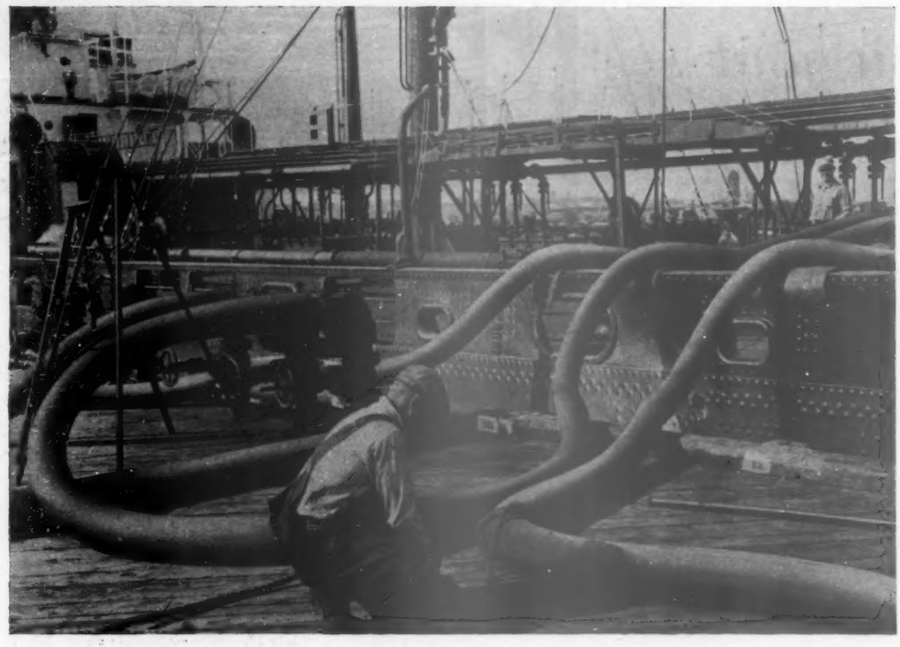
Oklahoma crude stocks for the same period increased at the rate of 50,000 bbl. daily This gain was brought about by the increase in Illinois production. The large reduction in Illinois production over the past 3 weeks assures that this situation will not become serious.

DAILY AVERAGE PRODUCTION FOR WEEK

	July 27, 1940	Bur. Mines July est. of demand	July state allowables	July 20, 1940
Arkansas	72,605	67,400	71,300	72,455
California	605,100	593,900	587,000	617,500
Eastern states	107,600	103,100	.....	104,600
Illinois	418,631	402,300	.....	464,116
Kansas	186,200	159,400	159,400	189,950
Louisiana	275,665	278,100	280,731	285,964
North Louisiana	*63,550*	.....	.....	*67,840*
Louisiana Gulf Coast	*212,115*	.....	.....	*218,124*
Michigan	53,614	61,600	54,000	54,096
Mississippi	9,405	9,700	.....	7,100
New Mexico	106,630	106,100	106,100	105,890
Oklahoma	403,625	403,900	408,100	414,525
Rocky Mountain states	95,130	103,500	.....	92,650
Texas	1,354,189	1,339,400	1,236,740	1,168,036
East Texas	*449,035*	.....	.....	*374,895*
West Texas	*210,928*	.....	.....	*181,986*
North Central Texas	*127,495*	.....	.....	*112,913*
Texas Panhandle	*70,017*	.....	.....	*66,015*
East Central Texas	*78,712*	.....	.....	*71,690*
Gulf Coast Texas	*328,443*	.....	.....	*284,145*
Southwest Texas	*89,559*	.....	.....	*76,387*
United States	3,688,394	3,628,400	.....	3,576,872



Export Licensing Will Curb U. S. Petroleum Shipments



Restrictions announced at Washington substantially retard oil-port loadings

A REDUCTION of 50,000 bbl. or more in the daily petroleum exports from the United States is in prospect for duration of the war. Extension of the export-license regulations to cover petroleum throws new obstacles in the path of U. S. oil exports which are already about 30 per cent below last year.

The estimate of 50,000 bbl. daily as the amount by which exports will be restricted is based on the assumption that licenses can be obtained covering limited volumes of products other than aviation gasoline and that Japanese and other foreign-flag tankers can be engaged to cover at lease a part of the shipments recently handled in American boats.

The combined exports to Spain, Portugal, and Japan averaged around 85,000 to 90,000 bbl. daily for the first 5 months of this year.

Japan has purchased between 60,000 and 70,000 bbl. of petroleum daily on the California coast so far this year, notwithstanding expiration of the trade treaty on January 26. Purchases of United States petroleum during all of 1939 by Japan averaged 75,000 bbl. daily.

Rigidity with which new petroleum export regulations are enforced against shipments to Japan are likely to have an important influence on world-wide operations. The production of 60,000,000 to 70,000,000 bbl. of oil annually from the Netherland East Indies has been coveted by Japan for several years. The Japanese appetite for a nearby supply of petroleum represented by the producing fields and refineries on the Netherland East Indies has been only whetted since starting its undeclared war against China with the concomitant obstacles to petroleum trade with this country.

Declaration that Japan could and would turn to other sources of petroleum supply in event its trade with the United States is blocked or becomes intolerably restricted was made last Saturday by H. D. Collier, president of Standard Oil Co. of California. Mr. Collier, who was elected president of his company while abroad, returned last week from an extended business trip to China and Japan.

The accompanying analytical summary of the week's war developments affecting the oil industry represents the coordinated findings of The Oil and Gas Journal staff members on the Gulf Coast, at New York, Washington, and at Los Angeles.

Highlights are:

1. President Roosevelt's proclamation subjecting exports of specific petroleum products, particularly aviation gasoline, to a system of licensing, further hampers offshore movement. Details of the various regulations are discussed on Page 21.

2. Obstruction of sales to Japan may force that nation to an even more desirable source of petroleum supply, the Netherland East Indies

3. Approximately 90 per cent of the world's tankers are now under direct control of the British Admiralty or Washington.

4. Rumania nationalizes British and French oil properties in that country making approximately 55 per cent of its production available to the Axis powers.

H. D. Collier's Statement

"There's plenty of oil in the world in whatever form the Japanese want it," declared Mr. Collier upon landing at San Francisco. "If they don't get it here they'll get it some place else.

"For years Japan has been our best petroleum customer. She now buys about 35,000,000 bbl. of petroleum and petroleum products, much of it high-test gasoline, a year. This amounts to from $40,000,000 to $50,000,000 of business annually.

"Nearly all of Japan's petroleum needs are filled by us. However, that doesn't mean that Japan can't get her petroleum elsewhere. Her business with America is the result not of a supply monopoly on our part, but of many years of good business relationships. There are plenty of other places that would like to have that business. They'll get it, too, if we force Japan to turn to them.

"She can get her oil from Ecuador and Peru in South America, from the expropriated stores seized by Mexico, from Iran and from the Dutch East Indies.

"In the Dutch East Indies there are two big companies, the Royal Dutch-Shell and the Standard-Vacuum, whose markets have fallen off because of war conditions. They are anxious to sell to Japan.

"The Royal Dutch concern is Dutch and British owned and the Standard-Vacuum is American owned. The latter would not be affected by an embargo here. Also, Japan can even buy from the Anglo Iranian Co., which is British owned.

"My trip to the Orient has been entirely satisfactory from the business point of view. I should like to mention that in Japan and elsewhere I encountered a distinctly pro-American attitude among business men."

In the only clarifying order so far issued on the president's proclamation subjecting petroleum exports to license restrictions, products are covered by the following specifications:

A. *Petroleum products.* — (*a*) Aviation motor fuel, i.e., high-octane gasolines, hydrocarbon, and hydrocarbon mixtures (including crude oils) boiling between 75° and 350° F. which, with the addition of tetraethyl lead up to a total content of 3 cc. per gallon, will exceed 87-octane number by the A.S.T.M. knock-test method; or any material from which by commercial distillation there can be separated more than 3 per cent of such gasoline, hydrocarbon or hydrocarbon mixture; (*b*) aviation lubricating oil, i.e., any lubricating oil of 95 or more seconds Saybolt universal viscosity at 210° F. with a viscosity index of 85 or more.

B. *Tetraethyl lead.*—Pure tetraethyl lead, ethyl fluid, or any mixture containing more than 3 cc. of tetraethyl lead per gallon.

C. *Iron and steel scrap.*—No. 1 heavy melting scrap.

Regulations Nos. 2 to 12, inclusive, of the regulations issued on July 2, 1940, pursuant to the act of July 2, 1940, are applicable to the exportation of aviation motor fuel, tetraethyl lead, and aviation lubricating oil.

Reports of the Bureau of Foreign and Domestic Commerce show that petroleum shipments to Spain for the first 5 months averaged 15,561 bbl. daily, compared to 11,715 bbl. daily for the same period in 1939. The increase of less than 4,000 bbl. in the daily average shipments from this country to Spain are too minute to be of concern and may logically represent only the increase of civil requirements developing in a nation rebuilding after a long civil war. Consequently, it must be assumed that deliveries to Spain rose precipitously in June and July.

Data are not yet available but there is ample evidence to support reports that United States petroleum shipments to Spain gained sharply after Italy entered the war in June and the Mediterranean was closed to American flag boats by extension of the neutrality zone. The increase in consignment to Spain indicates that United States petroleum formerly reaching the Axis powers through Italy was diverted to Spanish ports when Italy became an active combatant.

Practical Control Virtually Complete

While the Maritime Commission and Treasury Department regulations and even President Roosevelt's licensing proclamation are aimed chiefly at American flag boats and the products mentioned by specification, the practical control is virtually complete. Jurisdiction of one sort or another has been vested in the various Washington departments over foreign-flag boats anchoring in American waters.

The scope of regulation is made broad by the limitations on tanker movements dictated by conditions of war. The British Admiralty exercises direct control over approximately 60 per cent of the world tanker tonnage and about 40 to 45 per cent is under the supervision of Washington. There are left only a few tankers in the Swedish and Japanese fleets free to travel in certain trade routes.

A Swedish tanker loaded on the Gulf Coast with aviation gasoline for a Spanish port was permitted to proceed during last week's maneuvering. Portugal and Spain have been the only European countries to which American flag boats have been allowed to sail since Italy entered the war. Extension of the British blockade to include the Iberian Peninsula has been planned in London to offset the increase in petroleum shipments to Spain and Portugal in excess of their domestic requirements. One report from Houston was that 22 tankers had moved approximately 2,000,000 bbl. of aviation gasoline from the Sabine custom district of Texas during a recent 90-day period.

From the volume standpoint, cessation of exports to Japan far outweighs the stoppage of shipments to Spain. Last year, for example, while Spain took more United States gasoline than Japan, 2,127,385 bbl., against 1,381,466 bbl. Japan took 16,086,176 bbl. of crude oil to Spain's none; 6,020,182 bbl. of gas oil and distillate fuel to Spain's 771,047 bbl.; 3,888,754 bbl. of residual fuel to Spain's 919,493 bbl.; 513,545 bbl. of lubricating oil to Spain's 376,915 bbl., and 12,024,436 lb. of grease to Spain's 3,255,402. Since Japan is the second largest customer for United States petroleum exports, the obstacles blocking the path of offshore movement hits hardest at California operators. There remains, however, the possibility that Pacific Coast exports will move with limited freedom since Japan has a sizable national tanker fleet and a few boats of other foreign registry may be used in this service.

Partial or complete enforcement of the oil export restrictions created at Washington will leave California operations in a questionable state. The California situation has been of concern for several months because of declining exports.

Petroleum shipments from California touched a recent low in the week ended July 20 when the Oil Producers Agency estimated offshore movement at 92,500 bbl. daily, the lowest level reached in 11 weeks and 58,400 bbl. daily under the previous week. All of the drop in export movement was due to decline in Pacific foreign division, including both exports to Japan and to other Pacific ports.

Segregated as to products, heavy decreases were registered in shipments of two classifications—only slightly counteracted by increases in the others. Crude exports to all destinations for the week averaged 45,600 bbl. daily, down 38,400 bbl. from the previous week. Shipments of fuel oils fell off 48,200 bbl. to an average of only 11,600 bbl. daily, the lowest figure in 1940. Gasoline exports rose from the lowest weekly figure in 1940 to 21,800 bbl. daily, an increase of 14,700 bbl. There were also 13,500 bbl. daily exports of other products against none for the preceding week.

Japan has moved an estimated total of 327,000 bbl. of oil from Mexico through the Panama Canal so far this year, a minor part of her requirements, but representing petroleum that normally would be exported from California.

•

Rumania Shipping British and French Oil to Reich

By H. STANLEY NORMAN

RUMANIAN petroleum to fuel the German war machine was moving to the English Channel battlefront this week. Formidable barriers to the flow of Rumanian oil to Germany were brushed aside in a series of strokes against private British and French companies. Fifty-five per cent of Rumania's normal crude-oil production and about 45 per cent of the country's refining capacity was summarily removed from private administration and nationalized under the government's petroleum commissioner.

All British and French oil companies operating in Rumania are now under the operating direction of the commissioner who is a member of the pro-Nazi government created in recent weeks by King Carol.

Production of important British and French companies now under direct supervision of the Rumanian Government which implies that their entire output, or at least that over internal requirements, will be made available to Germany, follows (first 3 months, 1940):

Company—	Daily av. (bbl.)	Per cent of total yield
Astra Romana	25,460	20.26
Concordia	17,170	13.67
Colombia	13,061	10.39
Unirea*	13,057	10.38
Total	68,748	54.70
Romano-Americana	14,827	12.87

The important refining facilities confiscated by Rumania last week in the petroleum commissioner's move against British and French companies include:

Company—	Daily crude capacity	Cracking capacity
Astra Romana	40,000	14,000
Astra Romana	6,000	.....
Colombia	5,000	1,600
Concordia	30,000	.....
Spies Petroleum	5,000	.....
Rumanian Cons.	2,000	.....
Unirea*	23,000	3,500
Total	111,000	19,100
Per cent	46	43
Romano-Americana	20,000	8,000

*Unirea operates properties in Rumania of Phoenix Oil & Transport Co., Ltd., a British concern.

The only really important private company left in Rumania is the American-owned Romano-Americana, subsidiary of Standard Oil Co. (New Jersey), which accounts for nearly 13 per cent of the nation's total production. As can be seen from the tables, the Rumanian petroleum commissioner became the sole director of approximately 45 per cent of the country's normal crude-oil production by confiscating the Royal Dutch-Shell subsidiary, Astra Romana, and the two French concerns, Concordia and Colombia. While the Unirea company is not wholly British owned it administers the affairs and properties of Phoenix Oil & Transport Co., Ltd., of London and this operation makes up the large part of the concern's affairs in Rumania.

French Officials Expelled

A dozen French officials of the Concordia and Colombia companies were ordered expelled last week from Rumania. Two weeks ago approximately 30 executives of private British companies operating in Rumania were relieved of their functions and deported. Reports circulated from Bucharest that a total of 22 French oil-company officials were under orders to leave the country.

Since the outbreak of the war Rumania has experienced difficulty in meeting its obligations assumed in trade agreements with Germany because the French and British oil companies declined to make shipments to the Reich. Actual seizure of the British and French companies climaxed a series of events through which the Rumanian Government sought to fulfill its trade commitments. In the early weeks of the war Rumania attempted to meet its petroleum obligations to Germany by directing practically all government-royalty oil through the Danube and overland to the Reich. Later, it became necessary, so Rumania thought, to prohibit transfer of securities in the privately owned British and French companies to thwart a rumored plan to transfer ownership to Moscow. The British and French companies continued to use their powers of private management to divert all possible petroleum from Germany until the drastic action of last week was used.

Orders placing the $15,000,000 Astra Romana corporation under the national oil commissioner with full powers over production and distribution came a few hours before the departure of Premier Gigurtu and Foreign Minister Manoilescu for a conference with Adolf Hitler and his Foreign Minister von Ribbentrop at Salzburg.

In addition to the wholly owned Astra Romana company, Royal Dutch-Shell has a substantial interest in Steaua Romana and, therefore, a part of that company's producing and refining capacity will fall under government supervision.

SPARKS . . . FROM THE NEWS

BILLIONTH BARREL: The Pelican State last week passed an important milestone in its oil history when it produced its billionth barrel of oil since oil was discovered at Jennings in 1902.

SILENCE IS (N'T) GOLDEN: Sometimes when too much secrecy shrouds operations of industries repugnant means are adopted to lift the veil such as Rumania's grab of Royal Dutch-Shell properties for alleged failure to make production reports.

THE PAYOFF: Nebraska now has what it wanted—an oil area. The oil industry will be interested in seeing how quickly the state pays the $15,000 bonus due to the company which brought oil to the state.

ELUSIVE SAND: With gas at from 12 to 18 cents per thousand cubic feet at the wells, the Oriskany gas sand is worth looking for. The north district produces in Tioga and the southern end in West Virginia but the central portion still eludes prospectors.

REVELATION: Mexican officials have finally reached the conclusion after 2½ years that expenditures for services can not indefinitely exceed income, a business axiom which private oil companies learned long ago.

PEACE MARKET: There is an oil market in Europe consisting of belligerents, invaded countries and neutrals, which normally consumes 350,000 bbl. daily of petroleum whose only supplies now come from storage. These inventories in several countries are practically depleted.

ON, WISCONSIN: Wisconsin tops the list of desirable outlets for natural gas with three transmission companies seeking to enter the state.

RIGHT METHOD: Neutral observers agree that if Washington wishes to precipitate a crisis in the Far East, its embargo on oil shipments to Japan is a step in the right direction.

SMILE RETURNS: Oklahoma and Kansas producers are smiling again as they see markets lost to Illinois coming back with crude buyers soliciting their connections.

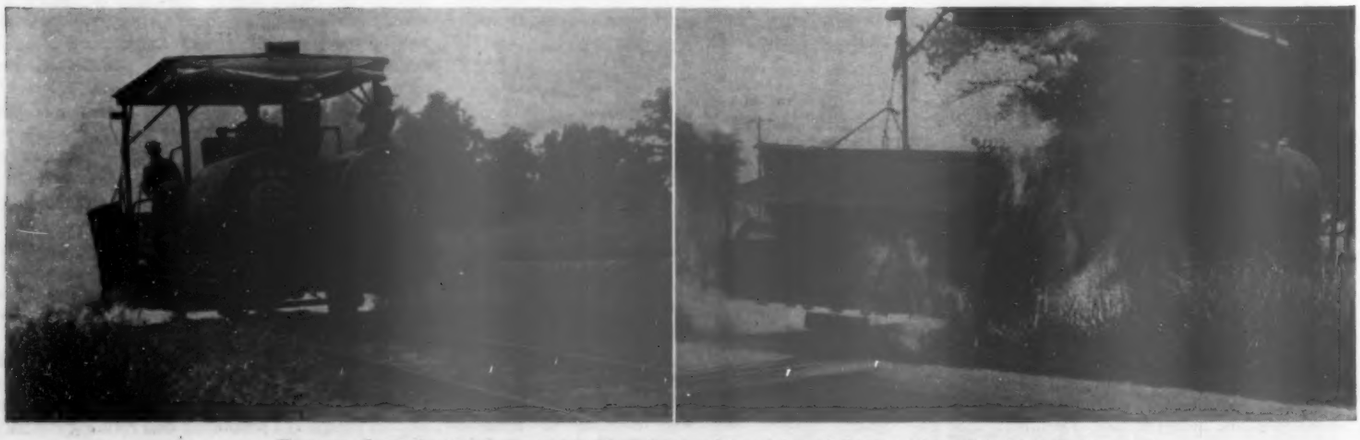
NO OFFSETS: Operators who have been forced to drill offsets to townlots and 1-acre tracts will envy the owners of the Rincon field in South Texas with 12,000 acres in one block.

TOTAL ECLIPSE: The embargo on petroleum shipments to Spain practically removed the only important oil market of continental Europe remaining to exporters in this country.

POLITICAL FUEL: One statistician says a hot political campaign this fall will prove a greater stimulus to motor-fuel consumption than two world fairs. He visualizes millions of partisans motoring many more millions of miles to attend political rallies.

IN REVERSE: The export licensing arrangement which, effective August 1, includes certain petroleum products, was designed to keep this country out of trouble in the war areas. Its enforcement may have the opposite effect.

WEED BURNERS ADD THEIR BIT TO OIL CONSUMPTION . . .



Here are shown front and rear views of an improved type of weed burner. Note oil tanks in front

Rincon Field in South Texas Being Steadily Extended

By NEIL WILLIAMS

THE Rincon field, eastern Starr County, is being established as one of South Texas' largest single petroleum reserves. A producing area covering more than 1,800 acres with 14 known productive sands already has been proved. This is being extended steadily with less than a quarter of the potentially productive area, based on indicated structure, so far drilled. The multiplicity of sands reduces the chance of well failure within the proved limits.

Except for one isolated well 1¼ miles northeast of the present producing area, the entire field is on a 12,000-acre block (approximate acreage) controlled by W. R. Davis, Inc. This company, as the sole operator, is carrying out an orderly, well-planned development program designed to prove up the field with a minimum of wells consistent with effective and efficient oil recovery.

Forty producing wells, of which 36 are oil and 4 gas-distillate wells, and 4 dry holes, the latter at outlying locations, have been drilled by this company. In these wells, 10 of the 14 proved sands are represented. Oil is being produced from nine of these sands, all within a range of depth from 3,500 ft. to 4,300 ft., while in the tenth sand, 4,800 ft., only a gas-distillate well has been completed. The latter, however, since has been killed and recompleted in one of the shallower sands. Although no producing wells have been completed in the remaining four known sands so far, conclusive evidence of the existence of commercial oil or gas production in them has been given in drill-stem and other tests.

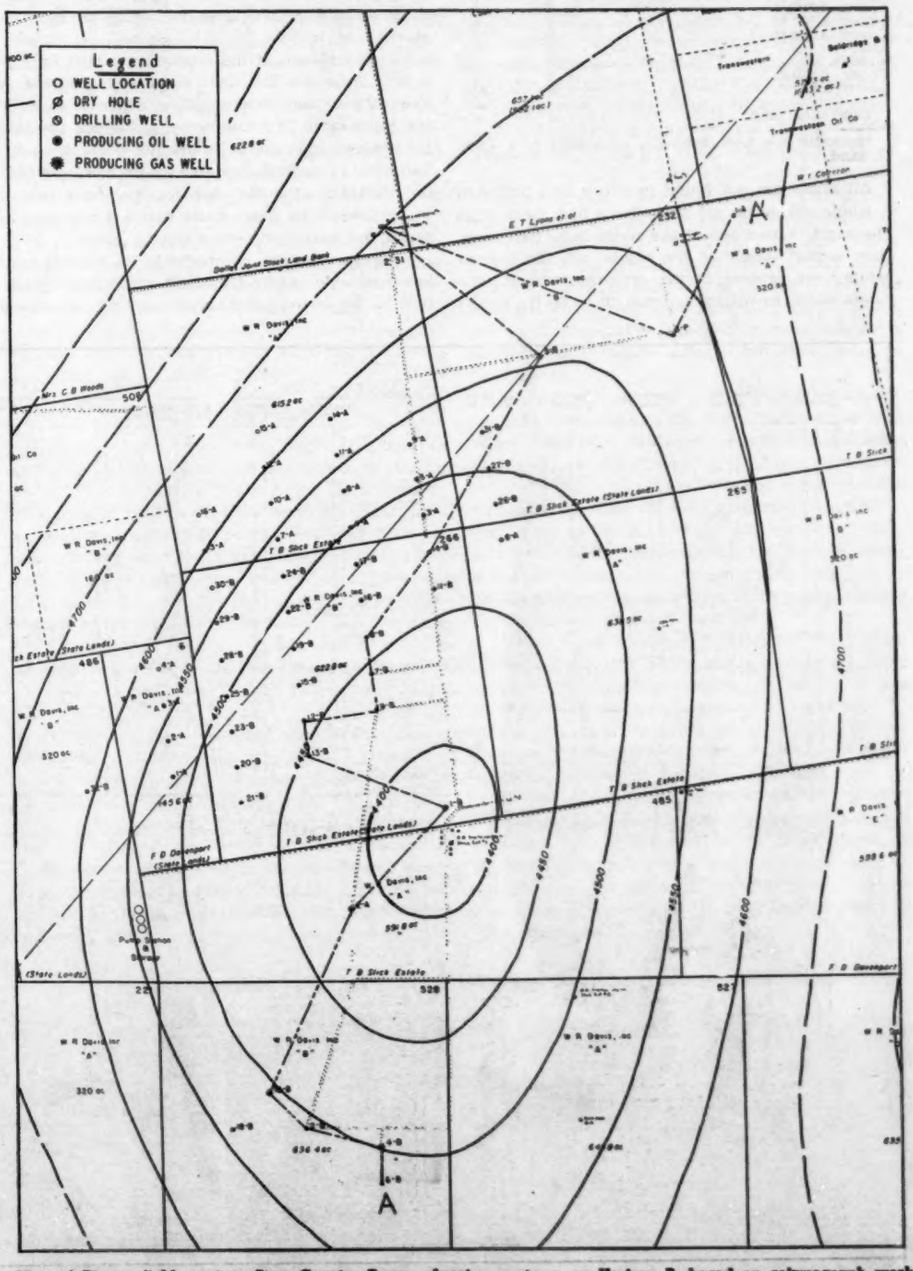
Type Structure

Geophysical pictures and other evidence revealed in drilling to date show the structure to be a slightly elongated domal-type anticline with a northeasterly-southwesterly axis. It embraces an area about 4 to 4½ miles long and about 3 to 3½ miles wide, making it one of the largest local structures in South Texas. Surface elevation of the area is from 425 to 480 ft.

In general features the structure has proved unusually uniform and regular. Overlying the top of the structure covering an indicated area of from 600 to 800 acres the sands carry gas and distillate only. At down-dip locations in these sands around the gas-distillate area the oil production is being developed although some of the sands carry gas-distillate well out on the flank of the structure. This development so far has been confined mainly to the northwest and north sides of the structure, but several wells have been completed on the southwest side, and chances of extension around other sides of the structure are considered favorable.

Early beliefs that there might be a major northeast-southwest fault across the south side of the structure that might cut off production there, are being discounted now as a result of the recent drilling of a row of three core tests through the area in question which failed to give any indications of such a fault. The beliefs that such a fault existed were based largely on an old deep dry hole that was drilled on that side, but it is now considered probable that the information obtained in drilling that well may have been misleading in the light of the more efficient and effective practices followed in modern exploratory drilling.

Definite determination of the 14 sands productive of oil or gas was made early in the development of the field by the drilling of an exploratory well. This well (No. 2-A Slick), located near the apex of the structure, was drilled through all the probable sand horizons to a total depth of 5,797 ft. On the way down every sand was completely cored, accurately logged, and drill-stem tested, and the hole electrically surveyed. With casing run and cemented on bottom, each indicated sand in succession from bottom up was tested in drill-stem flow tests to determine its productivity. Every form of test that would provide information as to the sand horizons, type of pro-



Map of Rincon field, eastern Starr County, Texas, showing contours on Horizon B, based on seismograph work by McCollum Exploration Co., with oil development to July 20

duction, rate of flow under varying conditions, pressure conditions, gas-oil ratio, etc., was made.

After all the sands were tested, the well was finally perforated in a sand at 3,990-4,010 ft., in which it was completed as a gas-distillate producer. Considering the structural location of the well, that sand was considered the most favorable for production. Not including the final perforation, a total of 24 different sets of perforations were made. In squeezing 19 of these sets, a conventional cement retainer was used each time. The other five sets of perforations were squeezed in one run in an unusual operation involving the use of a comparatively new tool. In addition to the coring and drill-stem tests, five electrical logging surveys were made in the hole.

Sands in which producing wells have been completed in the field are shown in the following tabulation in which also are listed the number of wells as of July 20:

Sand—	No. of wells—Oil	Gas
3,600-ft. (top sand)	1	0
Upper 3,700-ft.	1	0
Lower 3,700-ft.	3	0
Upper 3,800-ft.	1	0
Lower 3,800-ft.	1	0
4,000-ft.	7	1
4,100-ft.	13	0
Upper 4,200-ft.	3	0
Lower 4,200-ft.	6	*3
Total nine sands	36	4

*Includes one well originally completed in a 4,800-ft. sand.

All sands are not found in every well but with a single exception all wells have had more than one sand. A number of the wells have had more than a half dozen of the sands. All the known sands were present in the exploratory well. The sands range in thickness from 10 to 60 ft., and it is calculated the average thickness runs around 18 ft.

The first nine sands are all in the Frio section. The top Vicksburg sand to which all wells are drilled unless the structural position of a well and definitely indicated presence of water in the sand, or in immediately overlying sands, would preclude any occasion for drilling to it, is encountered around 4,300 ft. So far, only in a few wells has drilling to the sand not been considered justified. Although this sand to date has carried mainly water, it serves as the principal marker in the field.

Well-Completion Program

In drilling all wells through the Frio sands to the top Vicksburg sand at 4,300 ft., it is the program of the operators to complete each well in the lowest sand possible, and then as this sand becomes exhausted recomplete in each successively higher sand in turn. The only exception to this practice is when adjacent wells would be productive in the same sand, and one of them would have an alternative sand in which to be completed.

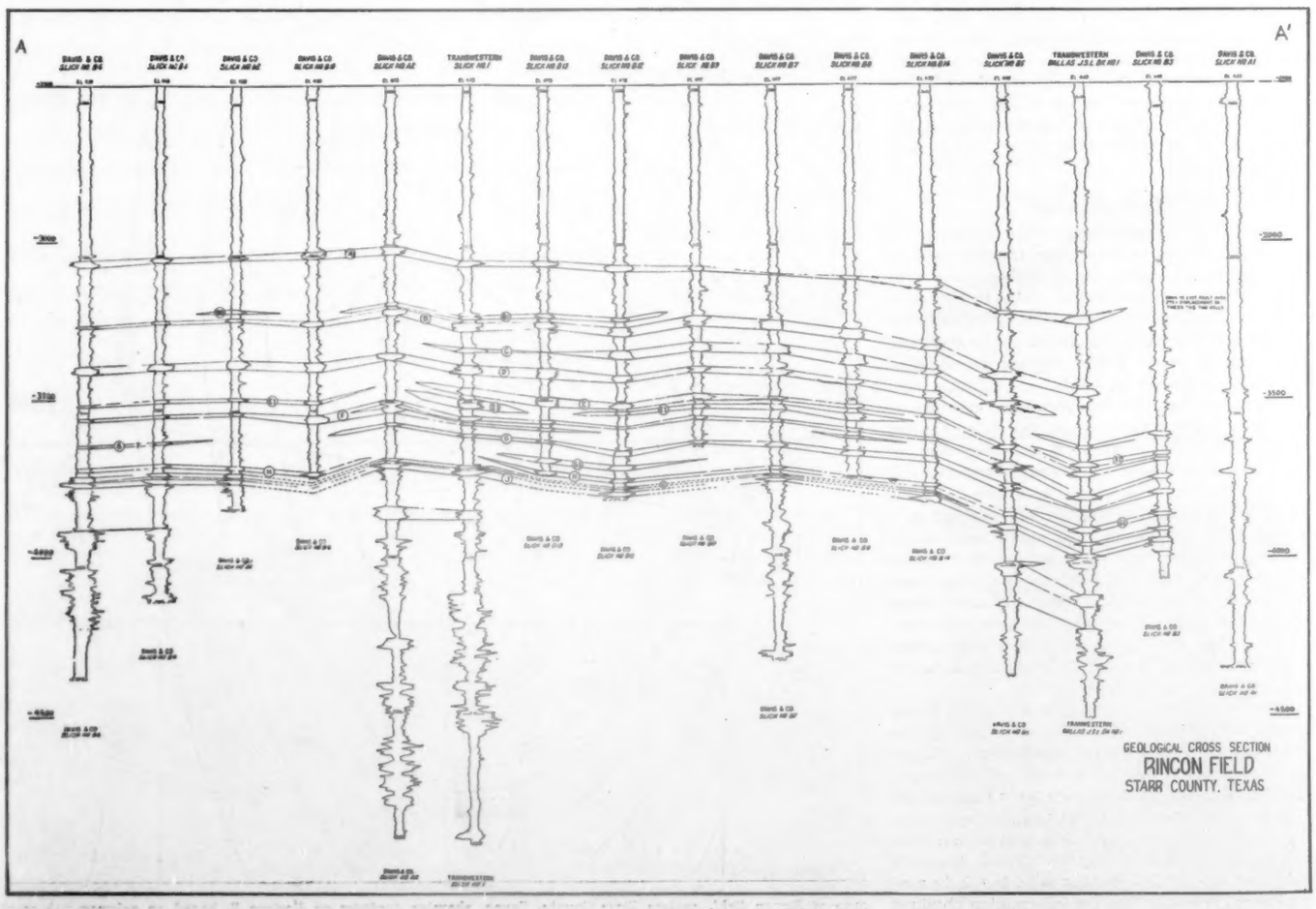
By coincidence, it has worked out that only in a few instances has there been any occasion or necessity to complete any two adjacent wells in the same sand. In a number of instances, the lowest sand in adjacent wells has not been the same, and also, as previously stated, there has been only one well drilled so far that does not have two or more productive sands from which a selection of sands for well completion can be made.

Consequently, the company in its development has been able to effect a much wider spacing pattern so far as individual reservoirs are concerned than that called for on the surface. The designated surface spacing for the field is one well to 20 acres, but in any single sand the spacing is not closer, except in a few instances, than one well to 40 acres. Generally, the spacing is wider than 40 acres.

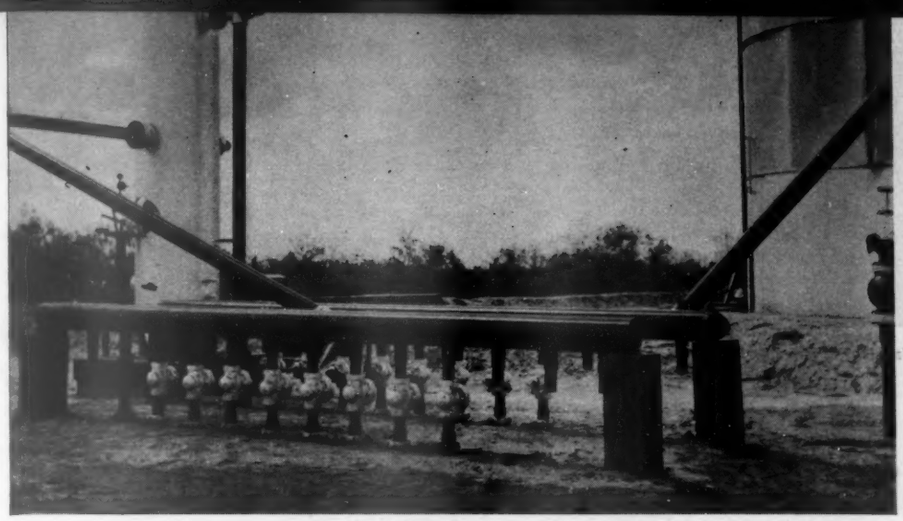
The surface drilling pattern adopted calls for a 660-ft. spacing north and south and 1,320-ft. spacing east and west. Made possible by the fact that land ownership is in large tracts with regular boundary lines, that spacing has been followed uniformly. This pattern was designed to permit later drilling, if desired, of additional rows of wells midway between the east and west wells. Such rows of wells would give the field an east and west spacing of 660 ft., the same as the north and south spacing, and place the field on a square 10-acre unit pattern.

Proved reserves of the Rincon field are conservatively estimated at approximately 40,000,000 bbl. This takes into consideration only that acreage already developed. Remaining is a sizable potentially productive area, development of which is expected to boost materially the extent of reserves.

Oil recovery to date from the field totals approximately 300,000 bbl. Present daily allowable production is between 1,600 and 1,700 bbl. with allowable allocated on a per-well or unit basis. This allocation is 45 bbl. daily for wells in sands above 3,900 ft., and 50 bbl. daily for wells below 3,900 ft. Development by W. R. Davis was started last September. At that time there was one distillate well in the field. This well, located near the apex of the structure, had been completed in February 1938 by Transwestern Oil Co. and D. D. Oil Co., from which companies, as joint owners,



Cross-section of Rincon field, East Starr County, South Texas, from south to north, showing existing multiplicity of sands and their correlation based on electrical logs



Closeup of standard manifold for lease flow lines to separator in Rincon field, Starr County, South Texas

the present operators acquired the block. Those companies, in conjunction with Rowan & Hope. also had completed, in May 1939, an oil well located about 2½ miles northeast of the distillate well. The latter has been listed as the discovery oil well of the Rincon field, but since completion it has been entirely isolated from the present Rincon field by dry holes, including direct offsets to the south and west.

The block acquired by W. R. Davis, Inc., does not take in the oil well, ownership of which was retained by Transwestern Oil Co. That well, completed in sand at 4,160-70 ft., has produced steadily until the past month. Its location is in the extreme southwest corner of a tract which is bounded on the scuth by the Davis block and on the west by a Sun Oil Co. block.

The discovery distillate well, taken over by W. R. Davis, Inc., was the third deep test drilled by Transwestern Oil Co. and D. D. Oil Co. It was drilled to a total depth of 6,862 ft. and then plugged back and completed in sand at 4,212-40 ft. The original test, located just a short distance south of the distillate well, was started in July 1936, and abandoned in December of that year after drilling to a total depth of 5,607 ft.

Making up the bulk of the block are properties of T. B. Slick estate with F. D. Davenport (D. D. Oil Co.) owning several sizable tracts. The State of Texas retains one-sixteenth of the minerals under alternate sections through virtue of its prior ownership of the properties as state school lands.

Development of the area by Transwestern and D. D. Oil Co. was undertaken on the strength of geophysical pictures based on shooting by McCollum Exploration Co. The development has followed the pictures unusually close. At the start of drilling exploration, the involved properties of the Slick estate and Mr. Davenport were pooled on a joint working basis with Transwestern Oil Co. representing the Slick estate interests.

Taking over the development of the field, W. R. Davis, Inc., moved in three drilling rigs simultaneously. One test (No. 1-A Slick) was started as a south offset to Transwestern and D. D. Oil Co.'s lone oil well northeast of the present producing area. Another test (No. 3-B) was started about ½ mile southwest but also northeast of the present field. The third (No. 2-B) was located about 3 miles southwest and about a mile southwest of the original distillate well.

Only the latter proved productive, it being completed as an oil well in sand at 4,171-81 ft. Its location still is about a mile south of the present main producing area. The other two of the first three tests started were abandoned. However, at this time, in the face of the disappointments, an additional rig was moved in and four new tests started simultaneously. One of these was the exploratory test (No. 2-A), previously referred to, and which the operators determined upon drilling in view of the dry holes which had been drilled. It was the drilling of this test and the proving of the 14 sands in it that inspired the company to continue the active development carried on since then.

Last March these four rigs were augmented by two others which brought the total active operations to six. However, since then five of these rigs have been shut down.

Overall well time averages about 20 days although a number of wells have been completed in as few as 12 days. All wells are drilled to the top Vicksburg sand at 4,300 ft., and there run the oil string, which then is perforated in the sand in which it is desired to complete the well.

In every well all sands are cored and drill-stem tested. Supplementing this work, but in this field done mainly for correlation purposes, electrical logs of formations are made in all holes. In early wells upwards of 100 cores were taken but this number has been cut to from 35 to 60. Drill-stem tests now run about five to the well.

Bottom-Hole Pressure

Operators have experienced few difficulties or problems. There have been no blowouts and so far there has been only one twist off. Pressures in the field have been consistently normal with an average bottom-hole pressure around 1,700 lb., this varying only with the depth of the sand. Flowing pressures range from 600 to 1,400 lb., with production through tubing and small chokes. Except while drilling sands, only native drilling mud is needed. Through sands, which are unusually loose and porous, Aquagel must be added to prevent loss of mud. For the same reason Aquagel must be added to cement used in cementing of casing. Weight of drilling mud is maintained from 9⅛ to 10 lb.

The casing program calls for the use of 300 ft. of 10-in. pipe for the surface string. Usually about 340 ft. is the setting. This string is cemented to the top. Original field rules called for about 850 ft. of surface casing but in the absence of water sand that cannot be walled off with mud or other sands that might cause trouble, that much casing has been found unnecessary, and the saving effected. The only concern now is to case off the thick surface caliche section. Seven-inch oil string is the only other casing run, which is cemented with from 300 to 350 sacks of cement. This string is used to facilitate deepening of wells to lower sands if this is later desired. All tubing is 2⅛-in.

Except for two wells on gas lift, there has been no occasion for artificial lift so far. All wells have been produced in accordance with the most efficient practices for coservation of reservoir energy, and still are flowing. In the absence of high pressures, use of 3,000-lb. test well connections and other equipment has been possible. This also applies to blowout preventers and other equipment used on drilling wells within the proved area. However, on wells which the company expects to drill later in undrilled areas around the structure where sand conditions are not fully known, higher pressure equipment probably will be used on drilling wells, as was done in early development in areas already drilled.

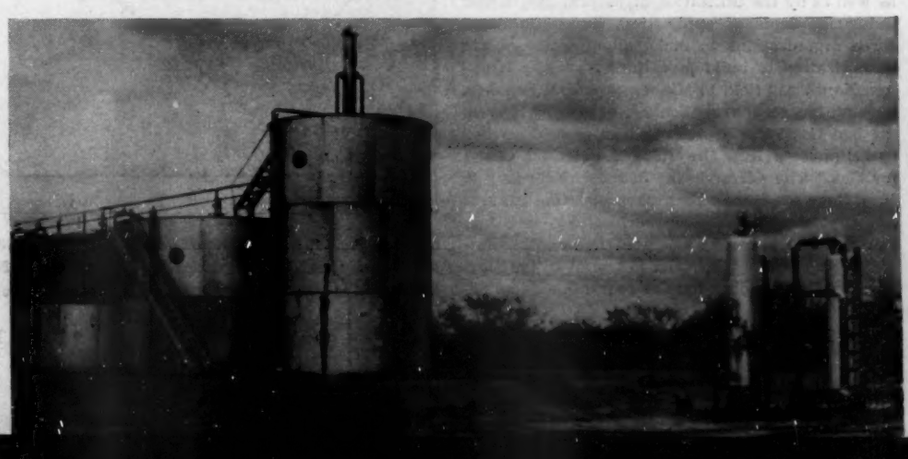
Gasoline rigs have been used exclusively due to the scarcity of water in the area. Water suitable for drilling is obtainable but none for boilers. Drilling has been done under contract by Complete Oil Well Service, Inc., Corpus Christi, and Morris-Hamilton Drilling Co., Houston.

Oil produced in the field is of unusually desirable quality, having a high-octane rating. Gravity ranges from 42° to 46° A.P.I. Production is transported in lines of Valley Pipe Line Co. to tidewater at Brownsville, where W. R. Davis, Inc., has provided storage facilities and a tanker loading terminal. Valley Pipe Line Co.'s line which serves the field extends from the Sun field northeast of Rincon to Samfordyce where it connects with the company's main line to Port Isabel, on the Gulf. The Davis terminal is on a navigable channel that extends inland from Port Isabel to Brownsville.

Location of the field is in a wild, isolated, sparsely populated and little-traversed region where vegetation is largely mesquite and cactus. It is about 20 miles north of Sullivan City (Samfordyce field), the nearest railroad and communication point, which is only a short distance from the Mexican border. There the company, practically to itself, has constructed a modern camp, office, and warehouse. Virgin roads have had to be cut through the desert brush to provide access to the various parts of the field.

Plans of the company have called for the installation of a recycling and repressuring plant to serve the distillate area and maintain bottom-hole pressure in the oil sands. At first it was believed that Rincon would be mainly a distillate field of wide extent, and that operations might have to be directed largely to distillate recovery. With the development of important oil production and discovery that the distillate area is not as large as had been expected, development of distillate production has been withheld and installation of the recycling plant postponed. However, it is expected that the recycling project will be revived within the near future.

Separator and tank-battery installation in the Rincon field, Starr County, South Texas



Terminal of gasoline line of Shell Oil Co., Inc., at Lima, Ohio

Trends in Pipe-Line Operation

By PAUL REED

THE assurance of enlarged markets, some of which are new, the necessity of reducing operating costs to a minimum, and important technological developments are contributing factors in one of the most active pipe-line construction years in the history of the petroleum and natural-gas industries. Projects recently announced and those in prospect assure that this situation will continue over the remainder of this year and well into 1941.

This year has seen extensive building of lines to serve middle western and eastern states. In crude-oil transportation, the dominating part played by the Illinois production has not only required the expansion of existing facilities as well as laying new lines but it has also led to a greater use of water transportation by barges on the Ohio and Mississippi rivers and by tankers on the Great Lakes. Furthermore, important factors in the transportation of refined products are the lines built from the St. Louis area. The gasoline line of Shell Oil Co., Inc., from Wood River, Ill., to Lima, Ohio, was extended by lines to Springfield and Columbus, Ohio, early this year. The Iliana gasoline line of Phillips Petroleum Co. from St. Louis to Chicago was completed a few weeks previously.

Because of the substantial saving which can be effected by this efficient means of transportation, several gasoline lines of considerable significance to the industry are being planned or are in the course of construction. Most of these were reviewed in "Pipe Line Construction Continues at High Rate," The Oil and Gas Journal, July 25, 1940, Page 154. In several instances obstruction to these projects has held up work which was ready to go ahead. Obstruction usually takes the form of trying to prevent crossing under roads through legal technicalities.

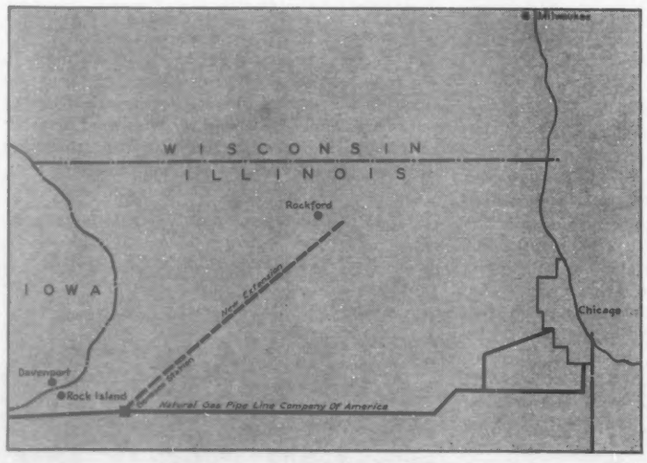
At this time the largest amount of pipe-line construction work under way is that being done to enlarge gas-transmission lines. In most cases these construction programs are the result of the growing necessity for providing adequate facilities to meet a growing domestic demand in the middle western area.

New Markets

The possibilities for serving new markets, such as those offered by Milwaukee and other cities as well as by the utilization of natural gas in new industrial fields of application, have stimulated three organizations to make an effort to obtain authorization to build pipe lines from the Hugoton, Kans., gas field to Minnesota and Milwaukee. In addition to the application of natural gas in the benefication of low-grade iron ores, described in "Minnesota Iron Ore Ranges Potential Outlet for Gas," The Oil and Gas Journal, February 9, 1939, Page 22, it has been proposed that natural gas be made available for the leaching, smelting, and roasting processes operated in handling ferromanganese ores which are essential to the Government in providing for the requirements of national defense. Kansas Pipe Line & Gas Co. is not only interested in this application of natural gas but it is actively engaged in furnishing gas for another use which is novel and capable of considerable extension. This process is that of dehydrating alfalfa hay. The dehydrating of alfalfa hay is carried on because when enzyme action, which is a bacteriological in nature, sets in, the carotene content of the hay is destroyed. Sun-cured hay has about a quarter of the carotene content of hay that has been dried artificially immediately after cutting. The vitamin A content is affected by the carotene content. Because of the importance of conserving the carotene content, the value of alfalfa may be determined by this content. Coal and oil have been used for this process, but natural gas is more desirable. Kansas Pipe Line & Gas Co. furnishes gas for this purpose to two plants of Denver Alfalfa Milling Co. and one plant of Western Alfalfa Meal Co. Panhandle Eastern Pipe Line Co. also supplies gas to an alfalfa dehydrating plant.

Gulf Coast Installation

The importance of natural gas in meeting requirements of the war situation is indicated by the scale on which Dow Chemical Co. is planning to operate at Freeport, Tex., where a $5,000,000 plant is now under construction which will be completed September 15. At the plant large amounts of natural gas will be consumed in the process of extracting magnesium from sea water by evaporation. Other chemical products will also be made in connection with the magnesium process. Magnesium is essential for the manufacture of metal, used extensively in making airplanes, as well as in munitions.



Natural Gas Pipe Line Co. of America will build 100-mile 20-in. line toward Milwaukee from Genesco station on the company's 24-in. line from the Texas Panhandle to Chicago. *(For story on this line see Page 52)*

Considerable attention is being given to a technical development which has recently come to the attention of the industry which may have far-reaching effects. This is the practice of liquefying methane, preparatory to shipping and storing it until it is needed for taking care of peak loads. The operation of an experimental plant of Hope Natural Gas Co. near Charleston, W. Va., was described in "Experiment With Liquefied Natural Gas for Storage" by W. V. Howard, The Oil and Gas Journal, May 9, 1940. Seeing the possibilities in this practice a number of companies are giving it serious attention. A plant for this purpose is under construction by East Ohio Gas Co. near Cleveland. Some proponents of this practice assert that it is possible to make a profit on liquid methane shipped by tank car from Texas to New York. It is also claimed that this practice will make it possible to operate a natural-gas transmission system with smaller-diameter lines than are now required since liquefied methane would be counted on to take care of peak loads. It might be said in this connection that increasing attention has been directed to storing natural gas underground at points from which it could be readily moved to markets in winter time. The principal difficulty has been encountered in procuring sufficient storage for such a program.

Many Products

The operation of gasoline or products lines as they are sometimes called involves distinct problems. It has been found that a number of products can be successfully handled in such a line at the same time. Meters are being used to an increasing extent. Master mechanics and superintendents on several gasoline and crude-oil lines have been devising means for regulating engines of reciprocating pumps so that the speed may be adjusted automatically according to changes in suction pressures. Something of the same kind has been done by a large natural-gas company to control the speed of compressor units. In the construction of new pipe-line pumping stations there is evidence that within the last year the problems involved in the design of pump manifolds have been given special attention. Except in the laying of the larger sizes of pipe, stove-piping is becoming common practice in construction work. It has been noticeable this year that pipe-line construction has been delayed to a greater extent by legal obstacles and need for authorization from government boards.

Industry Takes Steps to Arrest Spread of Price Cutting

By H. STANLEY NORMAN

Directors of the Independent Petroleum Association of America declined to endorse a recommendation for mild extension of federal regulation over the petroleum industry. Instead, the I.P.A.A. board which represents most of the independent producing factions in the industry, suggested a 10 per cent reduction in production as the best method to arrest crude-price cuts.

This summary of actions by state regulatory bodies in line with necessity for production retrenchment is supplemented by detailed information on the August allowables for Oklahoma and Louisiana on the State Capitals page of this issue (Page 18).

THE petroleum industry has laid the foundation for arresting crude-oil price cuts and for confining them to the scattered areas where the structure sagged in mid-July. Programs are under way for substantial reductions in production and refinery operations which, if carried out, will isolate the crude cuts and possibly bring early restoration of normal quotations in the depressed districts.

Curtailment to meet exigencies of the overproduction situation is the popular answer of the industry rather than an appeal for even modified extension of federal regulation or a complete cessation of producing operations. Attitude of the industry to even modified extension of control from Washington was indicated last week by directors of the Independent Petroleum Association of America, called to an emergency meeting at Oklahoma City, July 25. In framing resolutions designed to confine crude price cuts to less than 35,000 bbl. of daily production mostly in Texas, the I.P.A.A. directors completely ignored an open-meeting suggestion that federal authority be asked to supplement state regulation. The discarded recommendation for inviting extension of federal control was made by Charles F. Roeser, Fort Worth, former president of the I.P.A.A. Mr. Roeser proposed a conference of oil-producing states in Washington to work out a control measure. Members of the Cole committee would have been invited by Mr. Roeser to hear the ailments of the petroleum industry "because they have more data on the industry than anyone else."

Four-Point Program

The program outlined by Mr. Roeser would have empowered the federal authorities to do these things:

1. Require all oil-producing states to join the interstate oil compact.
2. Require states to produce not more than demand estimated by the Bureau of Mines.
3. Require refiners to post prices and prevent them from selling at discounts.
4. Regulate oil imports which are blamed for part of the industry's troubles.

Before presenting his four-point program, Mr. Roeser gave a general review of conditions that had undermined the crude market, calling particular attention to the loss of export markets because of the war and reduced sales of California oil to Japan which is turning to the Netherland East Indies and Mexico for supplies.

There were other expressions of resentment to the trend of imports from directors, including Harold B. Fell, executive vice president. "In the first 5 months of 1940," Mr. Fell said, "Mexico exported 4,500,000 bbl. of oil to this country, compared with 71,000 bbl. for a like period last year. Thus the efforts of our regulatory bodies are partly nullified."

The reciprocal trade agreement by which Venezuela shipments to this country have increased also came in for criticism. A committee of 25 is to be appointed to study current situations, draw up a long-time program to meet the situations and report at the annual meeting of the I.P.A.A. in Dallas next December.

Another committee appointed by Frank Buttram, president of the association, was approved by directors for the purpose of urging through the Interstate Oil Compact Commission a general reduction of 10 per cent in the August allowables set by the individual state regulatory bodies.

Although California, Oklahoma, and Louisiana have made substantial contributions to the goal of reducing production in August 10 per cent, the Texas order will determine whether the objective will be reached completely or whether a compromise will have to suffice. The three states from which August production schedules have been received reduced their allowables a total of 36,947 bbl. divided as follows: California, 13,276 bbl.; Louisiana, 5,571 bbl., and Oklahoma 18,100 bbl.

Illinois' Contribution

Important as are the reductions in prorated states the most worth-while contribution to the program of production curtailment is being made currently by Illinois. Production from Illinois dropped 45,485 bbl. in daily average last week and was 99,593 bbl. below the June peak of 518,224 bbl. There is no way of forecasting Illinois production from week to week, this depending entirely upon developments and the ability of operators to recover the oil. However, there is nothing in evidence at the moment to prevent Illinois production from continuing its downward trend of the past few weeks.

If August allowables in the states so far issuing new orders are strictly enforced there will be an even more substantial reduction in production than the figures show because practically all states have been running ahead of the July quotas. This is the way August allowables compare with actual production for the last week of July in the states that have set new quotas:

State—	Barrels— August allowable	Prod. for week ended July 27
Oklahoma	390,000	403,625
California	587,000	605,100
Louisiana	274,620	275,865
Total	1,251,620	1,284,590
Reduction	32,970	

Unless new prolific pools or other pays in existing fields are found soon in Illinois it may be that production for August will not average more than 400,000 bbl. daily. The July output will be in the neighborhood of 14,250,000 bbl., indicating that a reduction of about 60,000 bbl. in the daily average output may be contributed by Illinois. Arkansas authorities have announced that no change in allowables will be made in August, but Kansas officials have indicated that they "will go along" on the curtailment program.

Price Cuts Restricted

Meanwhile, the crude-oil market rode out another week with mid-July cuts restricted to North Texas, South Oklahoma, East Central Texas, and one field in Refugio County, South Texas. Only one small purchaser, Bryson Refining Co., joined the few concerns who abandoned the gravity-scale postings in North Texas in favor of a flat price of 75 cents per barrel. Bryson Refining Co. purchases approximately 1,900 bbl. daily in Jack County, half of which is consumed in its own refining operations at Bryson and the remainder is moved via Texas Pipe Line Co.'s system to Johnson Refining Co. at Dallas. The Bryson price reduction became effective at 7 a.m. July 22.

The reductions of almost 33,000 bbl. daily projected for prorated states and the possibility that Illinois' output may be off 60,000 bbl. daily in August leaves more than 264,000 bbl. daily to be taken up in Texas and Kansas if the goal of a 10 per cent retrenchment is to be attained.

Brighter spots in the crude-market picture included resumption of 100 per cent purchase of allowable from connections in Kansas by Sinclair Prairie Oil Marketing Co., instead of 75 per cent in the recent past. Sohio Corp. has followed through on its mid-July announcement that a 5-cent price advance would be instituted August 1 for production in the Wabash River district of Illinois and Indiana raising the posted price there to $1.05 per barrel.

●

Crude Prices Increased

Effective July 18, Imperial Oil has posted new prices for Turner Valley crude, ranging from $1.05 per barrel for 33 to 33.9-gravity to $1.67 for 64-gravity and over. Prices increase 0.02 cent for each additional degree of A.P.I. gravity. Prices are f.o.b. producer's tankage. The increase of 5 cents per barrel represents a partial return to producers of the saving of 8 cents per barrel in pipe-line and loading charges. The McGillivray-Royal Commission recommended a return to producers of the entire 8 cents, but the Alberta government took the view that only a partial return was justified. Under the new schedule 43-gravity crude, the average for Turner Valley, is increased from $1.20 to $1.25.

STATE CAPITALS...

LOUISIANA

ALLOWABLE OIL PRODUCTION in August and September under Louisiana's new conservation law has been set by B. A. Hardey, conservation commissioner, at 274,620 bbl. daily, a reduction of 5,571 bbl., or 2 per cent. South Louisiana's allowable was set at 214,763 bbl., a cut of 5,248 bbl. below July. North Louisiana's quota was made 59,857 bbl., a cut of 503 bbl. Commissioner Hardey said in issuing the new order for 2 months that a hearing would be called to adjust allowables should an emergency arise.

CALIFORNIA

WHILE NO FINAL DECISION has been reached plans are under way for defendants indicted by a federal grand jury and charged with violation of the Sherman antitrust act by allegedly conspiring to fix gasoline prices in Pacific Coast territory to enter pleas of nolo contendere at an early date. If this action is taken it will forestall the trial of the issue in November 1940 and bring the matter to an early conclusion. The nolo contendere plea under the legal interpretation means that the defendants admit the facts contained in the indictment but deny wrongful acts.

The defendants believed they were in the clear and all transactions were made known to various agents prior to the starting of legal proceedings. The indictment is so broad in scope that it would cover everything upon which even a slight tint of circumstantial vidence might be placed. Special assistants to the attorney general in charge of the case admit that such a possibility exists and that some action might be taken in the near future.

If the nolo contendere plea is accepted by federal Judge Paul McCormick in whose court the indictment was returned, and in whose court the trial would be held beginning next November, the court will impose a fine of such amount as it considers just. Since the return of the indictment all actions alleged in the indictments have been discontinued. Many marketers still feel that the plan for disposal of surplus gasoline by small independent refiners was a good one and cite the case where at least 12 small independently operated refineries in California have been shut down because of the return of the indictment. Obviously these small refiners feel quite disappointed as this suspension is the climax of a period of about 2 years during which they were able to operate at a profit.

THE CONSERVATION COMMITTEE of California Oil Producers met last week and voted to cut 4 bbl. per day from the allotment of "top" producers, affecting 869 wells, and to reduce the power factor applied to intermediate wells in order to maintain total oil production of the state at 587,000 bbl. per day. Completion of 107 new wells during the month, which required an allotment of 12,261 bbl. per day, made necessary the reduction of top allotment from 167 to 163 bbl. per day, and the further cutting down of production from intermediate wells. The cut in top allotment will result in a gain of 3,476 bbl. per day; the reduction in the power factor will net 3,400 bbl. per day, and abandonments, suspensions, and natural decline of producing wells will net 6,400 bbl. per day, the total of 13,276 bbl. of reductions making room for 12,761 bbl. of new oil production per day from new, recompleted, and reconditioned wells.

The recommended quota of 587,000 bbl. per day is less than the Bureau of Mines forecast of August demand for California oil. The bureau's forecast of 598,400 bbl. daily was not followed by the committee in view of the amount of oil in storage in California, and in view of the long-continued policy of maintaining a constant figure for California production, which contemplates additions to storage in winter months of low demand, and withdrawals from storage in the summer months.

TEXAS

CONSERVATION OFFICIALS OF FIVE STATES were invited to attend the state-wide hearing in Austin, Thursday, August 1, by Chairman Lon A. Smith, of the Texas Railroad Commission, on Monday. Speaking for the commission, Smith sent invitations to Gov. John E. Miles and Hiram Dow of New Mexico, A. T. Schoeppel of Kansas, T. E. Terrell of Louisiana, James Duce of Colorado, and O. C. Bailey of Arkansas. In view of present conditions in the industry, many observers believe that an order covering only September will be issued following the hearing rather than a 90-day order under which the state is now producing.

Possibility of a reduction in the state's September daily allowable is foreseen in view of a statement by Smith last Friday. The commission chairman suggested that Texas' allowable for that month be slashed to 10 per cent under the Bureau of Mines estimated market-demand figure. He preferred that the reduction be made by a cut in field allowables rather than by additional shutdown days. The state's net daily allowable at the start of this week was 1,275,678 bbl., or 63,722 bbl. less than the bureau's demand figure of 1,339,400 bbl. for July. Forecast underproduction for this month was placed at 38,270 bbl. daily so that the state's daily average production during July may be in the neighborhood of 90,000 to 100,000 bbl. under the bureau's figure.

NEW MEMBER FOR THE RAILROAD COMMISSION, to replace Chairman Lon A. Smith whose term expires this year and who did not run for reelection, rests between Pierce Brooks of Dallas and Olin Culberson of Hillsboro, incomplete returns for Saturday's election reveal. An unofficial compilation on Monday night from the return of 251 of Texas' 254 counties, of which 144 were incomplete, gave Culberson 188,025 votes and Brooks 187,885. Closest candidate following these two was Ross Hardin with 111,427 votes. Thus it appears that it will be necessary that a runoff be held between Brooks and Culberson on August 24.

LEAVES COMPACT COMMISSION

COL. E. O. THOMPSON, member of the Texas Railroad Commission, was removed as the Texas representative on the Interstate Oil Compact Commission Tuesday through action of Gov. W. Lee O'Daniel. Colonel Thompson was one of Governor O'Daniel's opponents in his race for renomination as governor. In the Democratic primary Thompson ran second in the race in which O'Daniel was renominated. In his statement the governor said that Thompson was removed "to promote the welfare of this state and bring about a more effective regulation and conservation of natural resources." Colonel Thompson has been a member of the compact from its inception in 1935. He served as chairman for 1 year

OKLAHOMA

OKLAHOMA'S ALLOWABLE PRODUCTION has been set at 390,000 bbl. daily, a reduction of 18,100 bbl. from the July figure. The August allowable is 4.4 per cent below the Bureau of Mines estimate of market demand from the state for that month. During the last few weeks of July, Oklahoma's production was in the neighborhood of 410,000 to 415,000 bbl. daily. The order covered 1 month only, in contrast to the 90-day order under which state fields have operated in recent months.

Prorated areas bore the brunt of the reduction. The Oklahoma City Wilcox wells, sole class A pool in the state, was cut to 79,884 bbl. daily from 84,000 bbl. a day actually produced in July. The Corporation Commission, accepting the recommendations of W. J. Armstrong, conservation officer, made a flat 4.9 per cent reduction in allowables from all prorated fields from the amounts they produced in July. Many producers were reluctant to take a reduction in view of the declining production in Illinois.

Allocations of pools for August, with the July adjusted allowable given first, are:

Class A—Oklahoma City Wilcox, 84,000 bbl.; 79,884 bbl.

Class B—Allen, 5,200, 4,945; Bethel North 1,850, 1,759; Billings Wilcox 6,000, 5,706; Earlsboro 6,650, 6,324; Edmond 3,875, 2,663; Fish pools 2,800, 2,663; Frederick deep 200, 190; Frederick West Canyon lime 1,200, 1,141; Grayson 1,000, 951; Hazel 260, 247; Jesse 1,900, 1,807; Keokuk Falls 2,800, 2,663; Konawa 1,075, 1,022; Konawa South 600, 571; Little River 6,200, 5,896; Little River East 600, 571; Lucien 8,000, 7,608; Maud 500, 476; Mission 1,200, 1,141; Moore 1,750, 1,664; Olympic 1,350, 1,284; Sacred Heart 250, 238; Sasakwa 1,150, 1,094; Sasakwa Townsite 350, 333; Searight 1,175, 1,117; Searight North 800, 761; Seminole City 6,900, 6,562; Seminole East 1,100, 1,046; Seminole proper and others 10,400, 9,890; Shawnee 1,500, 1,427; St. Louis 25,500, 24,251.

Class C—Britton South 200, unprorated; Fitts-Cromwell 1,200, 1,141; Fitts-Hunton 1,500, 1,427; Fitts-upper Simpson 10,000, 9,510; Fitts-Wilcox 3,300, 3,138; Fitts pool total 16,000, 15,216; Langston 209, unprorated; Lucien North 575, 547.

Class D—Britton North, unprorated; Cromwell South 125, 119; Doyle West 100, 95; Fitts-Oil Creek, unprorated; Jesse Hunton, unprorated; Keokuk Falls-Hunton 200, 190; Langston deep, unprorated; Meridian 125, 119; Olympic North, unprorated; Tecumseh, 75, 71; Traugh, unprorated.

ALABAMA

THE ALABAMA LEGISLATURE recently passed a law requiring oil operators to obtain permits to drill in the state. Applications are to be placed with the state Geological Survey at University, Ala.

The OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

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Unwarranted

In recent years whenever the going became temporarily rough there were those who contended that the remedy for the ills of the oil industry lay in some form of federal control.

They have insisted that operators should hasten to Washington and dump their problems on the doorstep of a government department or in the laps of a legislative group always willing to listen to any plan which would extend bureaucratic control of industry.

These seekers of a calm sea through governmental omnipotence are with us again, as ways and means of coping with present unsatisfactory production and marketing trends are discussed.

It is suggested that the federal Government, having just completed a series of investigations, knows all there is to know about this industry and should be able to prescribe remedies.

There is one obvious weakness in this contention in that these investigations failed to reveal anything that was vitally wrong. Here was a case in which the diagnostician was looking for an excuse for a major operation and was forced to be content with keeping the patient under observation.

In pointing to Washington, the alleged failures of Austin, Baton Rouge, Oklahoma City, and other state capitals, are emphasized. It is claimed that federal control is necessary because the states have not been successful in solving the industry's problems.

It is easy in the present situation, as in the past, to be unduly critical and to overlook the steady progress which state control has to its credit.

The basis for any sound conservation program, including the application of proration to wells and fields, is an understanding of technological developments and their operating significance. In contrast to the situation a few years ago, several of the oil states have conservation departments with competent engineers in charge.

In promulgating the rules around which their departments are operated they have had little aid in the experience of others because oil-production methods are not paralleled by any other industry.

More and more these departments have become clearing houses of information and guidance for those responsible for producing more than three and half million barrels daily of raw material.

Furthermore, taking the worst possible view of what the states have been able to do, there would still be no reason to believe that conditions would be improved for the industry by the application of any of the suggested forms of federal control.

If exhibits supporting this statement are necessary plenty are available from representatives of other industries and of several divisions of agriculture who went to Washington and now wish they had stayed at home. Arbitrary regulations, surrender of initiative, restricted markets and unprofitable operations, are some of the evidences of official incompetence.

The I.P.A.A. officers and directors at their Oklahoma City meeting last week did the independent producers whom they represent, and the industry generally, a great service in making clear again that they want no part of federal control. Their remedies, approved unanimously, call for action through the states.

While preserving democratic principles of government in relation to free industrial enterprise, most of the oil states have come a long way in establishing the necessary conservation practices for the oil industry.

To belittle these accomplishments and assume that a centralized control remote from the oil country could do a better job, is not the part of good judgment.

Southwest Pipe Rail Rates Reduced Effective July 28

EFFECTIVE July 28, 1940, the eastern, Central Freight Association, and southwestern railroads are establishing rates on pipe from manufacturing points to southwestern states, which result in material reductions under the present all-rail rates.

Although the reductions made at this time by the railroads are voluntary, the action follows the suggestion by the Interstate Commerce Commission that they do so. This suggestion was a part of the commission's decision in the cases before it, which have been in litigation since 1928, and throughout which the users of pipe in the Southwest were represented by the Southwestern Pipe Consumers Committee.

The general chairman of the committee is J. L. Burke, traffic manager, Stanolind Pipe Line Co., Tulsa, and the vice chairmen are: For Oklahoma—W. W. Klingensmith, traffic manager, Tulsa Chamber of Commerce, Tulsa; for North, East and West Texas—W. M. Maddox, traffic manager, Magnolia Petroleum Co., Dallas, Tex.; for South Texas—C. H. McNair, traffic manager, Humble Oil & Refining Co., Houston, Tex., and for Louisiana and Arkansas—Harry Graham, traffic manager, Standard Oil Co. of Louisiana, New Orleans, La. R. C. Fulbright, commerce attorney of Houston, Tex., and Washington, D. C., now deceased, represented the Southwestern Pipe Consumers Committee as counsel throughout the case.

The Tulsa Chamber of Commerce has actively participated in the conduct of the cases, through its traffic manager, W. W. Klingensmith.

Outstanding among the voluminous data submitted to the commission and the railroads by the committee is the fact that, even with 27½ per cent rates, pipe tonnage will yield higher revenue to the railroads than any of 48 other commodities moving currently from, to, and within the Southwest. The long years of work by the committee have thus resulted in bringing about substantially what it sought in 1928. The average saving to Oklahoma will be approximately $100 per carload.

On July 27, word was received that the I.C.C. suspended the proposed rail-ocean-rail rates, to became effective July 28; this leaves the present rates via these routes in effect pending investigation. The commission also suspended the proposed all-rail rates to the Houston group because of their close relationship to the rail-ocean-rail rates. This allows the all-rail reduced rates to interior points to become effective. Shippers throughout the Southwest are well pleased by the commission's action.

The railroads control the publication of the rates for rail-ocean-rail movement, and did not follow the plan suggested by the Interstate Commerce Commission for rates via such routes. The rates on that traffic, also filed to become effective on July 28, 1940, would result in the elimination of the ocean lines from participation in the pipe tonnage to the greater part of the territory involved. The ocean steamship lines have filed a petition for suspension of these rates, and also asked the commission to suspend the reduced all-rail rates. The Consumers Committee has filed a protest with the commission against any movement to block the reduced all-rail rates becoming effective, and in view of the long-drawn-out litigation on the all-rail rates, it is not anticipated that the commission will suspend them because of the disagreement between railroads and steamship companies as to the rail-ocean-rail rates.

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Defense Commission Opposes Suit Against Major Oil Companies

WASHINGTON, D. C., July 30.—The National Defense Advisory Commission yesterday intervened with the Department of Justice to prevent filing an equity suit under antitrust laws to break up major integrated oil companies.

Justice Department officials Tuesday declared they are proceeding with the mechanical work of preparing the oil suit for filing and that this will be completed late this week so that no delay has yet been caused by Defense Commission conferences. In the meantime they hope to be able to convince the commission there are no inconsistencies between proposed suit and defense program so that suit can be filed as soon as ready. Final decision rests with attorney general who returned today and was not in on earlier conferences. It is still undecided whether to drop the case entirely, make slight revisions, or delay for further conferences, but officials now are of opinion original plan will be carried out.

They declare that if commission can show specifically that suit will interfere with defense plans the department will modify its attitude accordingly but will not drop suit simply to gain industry's good will. Objections raised by commission are described as general and not very substantial, but department wants complete understanding and harmony before proceeding.

Defense Commission officials likewise declined to discuss the matter, but those questioned obviously were informed of the situation. It is understood that Blackwell Smith, Defense Commission counsel and former N.R.A. counsel, has been working actively on the matter since Friday. Presumption is major companies have convinced the Defense Commission that suit to break up integrated operation at this time would impair the industry's efficiency in meeting defense demands.

Interests opposed to integrated operation are incensed over developments and promise a congressional investigation will be sought if the oil suit is not prosecuted as planned.

It has been suggested that such a suit would disrupt the oil industry, throw it into chaos, cause a long period of uncertainty and a longer period of economic readjustment, all of which would impair the efficiency of the industry at a time when the greatest efficiency is needed for defense purposes. In answer to this, department officials declare that the mere filing of a suit should not have any of these results. It will take months to try the case and perhaps years to get a final settlement if it is carried to the Supreme Court, and the terms and application of the decree, if any, will be controlled by the court, and by that time the emergency should be over. If it should develop by the time the litigation is ended that defense considerations make it inadvisable to enforce a disintegration decree, such a plea can be made and considered at that time, in the view of department officials.

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THE MARKETS*

CRUDE OIL: Bryson Refining Co., purchaser of 1,900 bbl. daily in Jack County, North Texas, was the only concern joining in the local crude-price reductions. The company posted a flat price of 75 cents per barrel in the Bryson pool. The Sohio Corp. followed through on its mid-July announcement of a 5-cent advance August 1 for oil purchased in the Griffin, Iron, and Storms fields in the Wabash River area of Illinois and Indiana, making the new price $1.05 per barrel. Other crude postings were unchanged and basic tone of the market is stronger than it has been since the middle of July.

REFINERY: The embargo on petroleum shipments to Spain, Portugal, and Japan caused added concern over the export situation. Domestic prices are generally unchanged for refined products. Domestic gasoline shipments are at record high levels but prices are hovering around previous lows. Light fuel oils are soft.

TANK-WAGON AND POSTED DEALER: Effective July 29, Standard Oil Co. of Indiana advanced subnormal tank-wagon prices on all grades of motor fuel in North Dakota, both to dealers and consumers 0.5 cent per gallon. Standard Oil Co. of Kentucky lowered consumer and dealer tank-wagon prices on gasoline at several Florida points July 9, 10, and 13, 0.5 cent.

FINANCIAL: Oil securities muddled through another week of dull trading. The high and close of 30 representative stocks were unchanged from the preceding week. Average of 30 active stocks for week ended July 27: High, 21.38; low, 20.80; close, 21.12. Week ended July 20: High, 21.38; low, 20.90; close, 21.12.

*Detailed information in Market Section.

Administrative and Professional Employe Definitions to Be Investigated

WASHINGTON, D. C., July 29.—The Wage and Hour Division of the Labor Department will decide within a few weeks whether to make any changes in the present definitions of executive, administrative, professional, and outside salesman, as the terms are applied to employes exempt from the Fair Labor Standards Act. The announcement was made at the last of a series of four hearings on proposed redefinitions of the four terms. The latest hearings dealt with transportation, public utilities, and communications industries, while the previous ones concerned the wholesale distributive trades, the manufacturing and extractive industries, and banking and finance.

At the hearing on extractive industries, spokesmen for the Mid-Continent Oil and Gas Association asked that definitions of administrative and professional employes be broadened to cover about 30 additional groups of workers, including executive secretaries, different types of engineers, and field workers, and specialists of various kinds.

At this week's hearing, witnesses continued to file redefinitions which would exempt from the act increasing number of workers, and in addition would provide for minimum weekly salaries of $25 to $30 for professionals and $30 to $37.50 for administrative employes.

Thorley's Test in Rosecrans Field a Small Producer

LOS ANGELES, Calif., July 30.—The long-awaited completion of the Thorley Oil Co.'s test in the Rosecrans field has proved a disappointment. The well was completed at a total depth of 8,080 ft. flowing 350 bbl., 33 per cent cut and with very little gas. The oil is 31-gravity crude, but the lack of flowing pressures will probably give the area a setback.

This test and its possible significance is discussed on Page 61 of this issue of The Oil and Gas Journal.

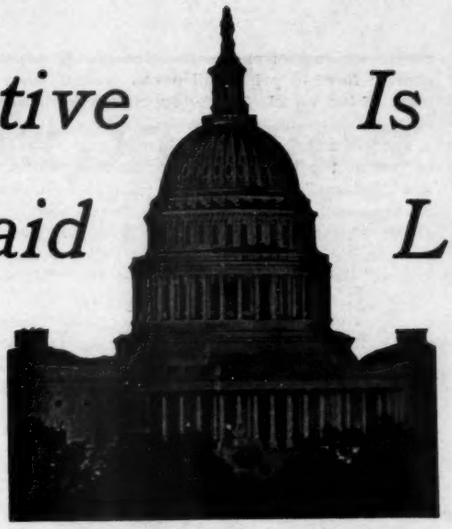
Canada May Curtail Imports Of U. S. Petroleum Products

OTTAWA, July 30.—A hint that Canadian imports of petroleum products from the United States may be curtailed to alleviate the drain upon Canada's supply of foreign exchange was given today. The possible action was mentioned by Munitions Minister Howe addressing Commons. Canada is the largest single customer for United States petroleum exports.

Freight Bureau Applies for Reduced Rates on Petroleum Products

The Texas-Louisiana Freight Bureau has applied to the Louisiana Public Service Commission for reduced freight rates on petroleum products from Lake Charles and West Lake, Louisiana, to other points in the state. The action is incited by the construction of a refinery at West Lake by Continental Oil Co., and is designed to gain a more equitable rail rate to compare with low water rates in the area.

Ulterior Motive Is Seen in Oil Embargo Laid Last Week



By HENRY D. RALPH

WASHINGTON, D. C., July 29.—Curtailment of petroleum exports, long whispered as a remote contingency, was imposed by the administration in three separate, but related, moves last week.

Most important was a proclamation by President Roosevelt adding petroleum products to the list of commodities which may not be exported without a specific license from the Department of State. Supplementary regulations confine this restriction at present to aviation gasoline, aviation lubricating oil, and tetraethyl lead and ethyl fluid.

The proclamation takes effect August 1, and no vessel, train or truck leaving United States territory after midnight, July 31, may carry any amount of the listed products unless the local customs collector or postmaster has been furnished with a license covering the particular shipments. Licenses are issued by the Division of Controls of the State Department on special forms obtainable at the division or at most customs houses.

At the same time it became known that both the U. S. Maritime Commission and the Treasury Department have adopted the policy of refusing to permit American flag vessels to carry petroleum to Spain or Japan. A number of tankers have already had to cancel proposed voyages because of these restrictions.

All three actions were taken in the name of national defense, and different reasons were given for each, but observers were convinced that the overall and impelling reason for all three is the administration's policy of curtailing economic aid to totalitarian aggressor nations.

It was officially denied that the actions were related to the British announcement that the economic blockade of Germany and Italy is being tightened and applied to Spain on the theory that essential supplies have been reaching the Axis powers through Spain. Maritime Commission and Treasury actions were taken before the British announcement, though not officially revealed, but they may have been taken in anticipation of it or with advance information.

Excuse for Bad Relations

The present restrictions should not actually impose much of a hardship on Japan, but the Japanese can, if they choose, use the incident as an excuse for another break in the already strained diplomatic relations with this country. Petroleum and scrap iron have been the most important supplies purchased by Japan in the United States, and without them she could not have continued her undeclared war against China, but at present the restrictions apply only to high-octane aviation gasoline and iron and steel scrap of "No. 1 heavy melting" grade. The bulk of Japan's gasoline purchases have been of lower-octane gasoline, and this grade of scrap is only a small percentage of Japan's scrap-iron purchases. It is yet to be seen whether the administration will refuse all licenses of the restricted commodities to Japan. If the license system is viewed by Japan as a diplomatic insult or as a serious economic handicap, the Japanese may quite possibly attempt to gain control of petroleum resources of the Netherland East Indies.

The license system was imposed under an act approved July 2 and put into effect July 5 with respect to a long list of chemicals, metals, and machine tools. When this act was being debated in Congress it was suggested that it would be used in curtailing exports of petroleum products and scrap iron, but neither was on the original list, and when President Roosevelt was asked about this some 3 weeks ago he intimated that the act was to be used only to conserve materials essential in national defense and that there appeared to be no shortage of either scrap iron or petroleum in this country. No explanation was given for adding either of them at this time.

"Clarifying" Definitions

Considerable mystery and confusion surrounded the addition of petroleum and scrap to the license list. On July 25 there was posted on the bulletin board of the White House press room a brief executive order adding "petroleum and petroleum products" and "scrap iron and other scrap metals" in their alphabetical places in the July 5 list of commodities. This order was dated July 23. At his press conference July 26 President Roosevelt criticized newspapers for referring to this as an embargo, and promised that later in the day there would be issued some clarifying definitions.

Late that evening an entirely different proclamation was issued, making no reference to the earlier order, and listing three commodities, "petroleum products," "tetraethyl lead," and "iron and steel scrap." A separate regulation further restricted the application of the proclamation to certain categories of each commodity. The July 23—or July 25—order was not withdrawn, but officials of the State Department's Division of Controls declared that they had never heard of it and that it had not been placed in effect, and that licenses would be required only for those articles listed in the July 26 regulation. For 24 hours it was assumed in Washington that customs officers were refusing export clearance for all shipments of petroleum and petroleum products and all scrap metals.

This misunderstanding was typical of the way in which the license system was put into effect on July 5. The list of articles subject to license was announced late July 3, with only 2 days intervening, one of them a holiday. The definitions were so vague that there was much doubt as to whether or not certain products required a license and government officials were so swamped with inquiries that they could not make rulings for a couple of weeks. Printed application forms were not available in sufficient quantities for more than a week, and even now the division is far behind in passing on applications. The result was great confusion in exporting circles and the law acted as a complete embargo for some time. Since the new regulation did not go into effect until August 1, petroleum exporters had a few days to obtain application forms from Washington or from customs collectors, and by this time customs officials should be sufficiently familiar with the procedure so that delays will not be so great.

Maxwell Named Administrator

The definition of aviation gasoline given in the regulations proved puzzling to many oil experts in Washington. It developed on inquiry that some of the petroleum technicians who have been with the Government for years and who have national scientific reputations were not consulted in drafting this definition, or were asked to give immediate advice over the telephone.

The law gives full power to the president to determine what commodities shall be subject to license, and what licenses should be granted. Acting in his capacity of commander-in-chief of the Army and Navy, President Roosevelt designated Lt. Col. Russell L. Maxwell, U. S. Army, as administrator of export control. Licenses are issued by the Division of Controls of the State Department which previously had been in charge of licensing the export of arms and munitions under the neutrality laws, but technical advice is given by Colonel Maxwell's office. Neither office has made public any rules or policies for granting or refusing licenses and at present it is the policy not to reveal the number of licenses granted or refused for a given commodity or to a given country, so there is no way of foreseeing how nearly the aviation fuel and lubricant regulation will approach a complete embargo.

Application of the license system to aviation gasoline came as a complete surprise, since officials of the National Defense Advisory Commission had expressed the view that production facilities in the United States are ample to supply all military needs at the present and for some time to come.

The Treasury's actions in refusing to permit tankers to clear for Spanish ports were taken under authority of a presidential proclamation of June 27 creating an Office of Merchant-Ship Movements authorized to control movements and anchorages of all vessels in American waters. It became known on July 25 that on July 10 and 11 this office had refused clearance of the Texaco tankers "Aryan" and "Nevada" from Port Houston, Tex., to Santander and Bilbao, Spain. These ports are among the few European points open to American vessels under the neutrality proclamations. The official explanation is that since oil is an article of contraband the tankers might have been sunk or seized which might lead this country into diplomatic difficulties or war. It is not definitely known whether or not the Treasury will permit tankers to clear for Portugal or other parts of the world not closed by neutrality proclamations.

The action of the Maritime Commission was of

the same nature but under different authority of law and with a different official explanation. The commission revealed that it had adopted a policy of refusing to permit American vessels to be chartered to aliens for voyages to Spain or to the Orient on the ground that this would take the ships outside the commission's control for too long a period and the ships could not be brought back to American waters on short notice if necessary for national defense or other reasons. American flag tankers engaged in foreign service are subject to regulation of the Maritime Commission even though ownership or direct control of the boat does not leave the hands of nationals. This ruling was expressed in Washington Tuesday. The Maritime Commission has ruled that Section 9 of the 1916 Shipping Act prohibits the charter of an American vessel to an alien without approval. Under the Supreme Court decision in the Lake Monroe case, 250 U.S. 246, the term "charter" includes any agreement in addition to the usual charter form by which alien can control movement of the vessel. The ruling embraces all foreign deliveries by company-own tankers.

The commission revealed that it had refused to permit the Cities Service tankers "Missouri" and "Kansas," and the cargo freighter "Louis Luckenbach" to clear from the West Coast for Japan with cargoes of 72-octane gasoline. However, on July 26, the day after this policy became known, the commission permitted the "W. S. Miller" of the Standard Oil Co. of California to take a cargo of gasoline from California to Vladivostok, Russia. No explanation was given for this exception to the announced policy.

Advices from Japan indicate that the Japanese are both worried and angry at the obstacles placed in the way of Japanese imports from the United States, and the Japanese ambassador made an extended visit to the State Department on Friday.

Guinns to Receive Nebraska's Commercial-Well Bonus

FALLS CITY, Neb., July 30.—For bringing in the first commercial oil well in Nebraska, W. A. and B. G. Guinn will receive a $15,000 bonus from the State of Nebraska.

Their second venture, the Frederick Bucholz, which is located a short distance west of Falls City, qualified for the prize offered by the state for the first well that would produce at least 50 bbl. a day for a 60-day period.

In the 60 days, a total of 10,180.32 bbl. of oil were removed—7,000 bbl. more than was necessary to meet the state's requirements of 3,000 bbl.

The Guinns became eligible for the award less than 9 months after they brought in the discovery well in the Forest City basin, the R. H. Boice, which is ¾ mile northwest of the Bucholz.

Although the Nebraska Legislature has enacted a law which calls for payment of the $15,000, the money has not yet been appropriated. This is expected to be only a formality, however, with the 1941 unicameral session taking action to provide the funds.

The Guinn brothers are native Texans. B. G. Guinn moved here from Slaton, while W. A. Guinn owns a 1,000-acre ranch near San Angelo.

The Guinns started in the oil business 10 years ago as seismograph shot-hole contractors. Only in the past 5 years have they been engaged in the lease and royalty end of the business.

They formed the Pawnee Royalty Co. and extended their activities into a number of large oil-play areas, chief of which is the highly productive field in Illinois in which they still have interests. The Boice well, incidentally, was the first they had drilled entirely upon their own.

Sites for the Boice and Bucholz wells were selected by Albert Ladner of Houston, Tex., geologist for the Pawnee company. Mr. Ladner has been associated with the Guinns only since February 1939.

Harry Harper, who is head of the Ferndale Drilling Co., was the driller on the two ventures. Mr. Harper, whose home is at Odessa, Tex., has been associated with the oil business since 1910.

Brick P. Eidson, who also is from Odessa, arrived here in 1938 and started assembling about 70,000 acres of oil and gas leases for the Pawnee firm in this county and in Brown County, Kansas.

The Guinns had failed in their initial attempt to win the state's bonus at the Boice well, which was brought in on November 1, 1939.

The Pawnee Royalty Co., owned by the Guinn brothers, went on the bonus run at the Boice on November 20—just 19 days after the discovery, and their efforts proved futile exactly 19 days later, on December 9.

No trouble had been encountered in removing the required 50 bbl. of crude daily until the nineteenth day. Then the well was clogged by a heavy paraffin

W. A. GUINN *B. G. GUINN*

base and operations had to be suspended, throwing a pall over the county and those associated with the development.

A total of 1,116 bbl. of oil was obtained from the well, an average of 58.75 bbl. daily.

Disheartened but not completely discouraged, Pawnee Royalty officials spudded in the Frederick Bucholz on April 22, using cable tools, the same type used at the Boice.

Shortly before noon on May 8, the well was brought in. Production at that time was estimated at from 24 to 36 bbl. daily. The crude was found in the Hunton at a depth of 2,225 ft. The Boice had yielded oil in the Hunton at 2,279 ft.

On May 10, 500 gal. of acid was poured into the Bucholz, which immediately began flowing at the rate of 300 bbl. daily. Excitement greater than that created by the original strike swept over this section and the way was paved for a real boom.

In the first 4 days, the Bucholz produced 1,200 bbl. of oil. It continued to flow at that rate and the Guinn brothers decided on their second attempt to get the bonus. The Bucholz run started on May 29. If the Pawnee concern had begun the run upon discovery of the well, it would have qualified for the prize on July 9.

Marketing troubles which beset Pawnee prevented it from allowing the well to flow at top capacity throughout the run. The Searle Petroleum Co., of Omaha, which had contracted to buy the crude, was unable to haul the oil away as fast as it accumulated.

No swab or pump was used in obtaining the oil from the Bucholz. Workmen simply turned on a valve, permitted the crude to flow out naturally and then closed the valve when they deemed it necessary.

At the scene throughout the 60 days were two deputies appointed by J. A. Ainlay, head of the state Motor Fuels Division. The pair, W. J. Wenzl, of Dawson, and James E. Knajdl, of Brainard, kept a check on the well's production and sent their reports to Mr. Ainlay. The deputies' services were paid for by Pawnee.

DEATHS

ALBERT MORRIS, 34, gager for the Bradford Oil Refining Co., Bradford, Pa., and brother of H. S. Morris, advertising manager for the Quaker State Oil Refining Corp., Oil City, Pa., died in the Bradford, Pa., hospital July 24 of burns received in an explosion at an oil-pumping plant at Chipmonk on July 19. In an almost superhuman effort he struggled to his car and drove rapidly to the Bradford hospital 14 miles away. The burns covered practically his entire body.

ORVALL TROWER, 22, of Centralia, Ill., died as a result of injuries suffered when he fell from a derrick in the Salem, Ill., field. He was employed by Schoenfeld, Hunter & Kitch Drilling Co. Mr. Trower is survived by his bride of 8 months. He was born in Cleveland, Okla., and lived in Stroud before moving to Illinois.

FREDERICK W. BAILEY, 66, widely known in the oil and legal fraternity in the Mid-Continent section, died at his home in Tulsa last week after a long illness. He came to Tulsa more than 25 years ago from Pennsylvania and joined the law firm of Roberts, Bailey, Roach & Bailey, of which firm he was the last survivor. His widow survives.

HOWARD S. JOYCE, 54, Tulsa pipe-line engineer, died last week. Funeral services were held last Friday.

E. V. NEIMEYER, 51, insurance manager of the Humble refineries in Texas, died Sunday, July 21, at his bayshore home in La Porte, Tex., from a heart attack. He had been employed by the Humble company since 1917 and was a former president of the Humble employes credit union, and was one of the oldest employes of the company in point of service.

JACK C. SHAFFER, 67, former Tulsa oil producer, died last Thursday in a Chicago hospital. He had undergone an operation a year ago. Mr. Shaffer was a native of Ohio, coming to Oklahoma 20 years ago. Mrs. Shaffer survives.

R. H. "UNCLE DICK" DELANEY, one of the Panhandle's first oil-well drilling contractors, died at his home in East Aurora, N. Y. Mr. Delaney came to Texas in 1910, settling in Wichita Falls. When oil was discovered in the Panhandle he moved to Hutchinson County in 1921, and 3 years later moved to Pampa where he remained until 3 years ago. He continued the Delaney Drilling Co. until a year ago. The widow, a daughter and a son survive.

HENRY A. O'FLAHERTY, 64, for 22 years an inspector for the National Transit Pump & Machine Co., Oil City, Pa., died at his home in Oil City last week following a few weeks illness. A son and a daughter survive.

HARRY M. RUGG, 59, automotive engineer of the Pennsylvania Grade Crude Oil Association and outstanding figure in the automotive engineering and lubrication fields, died July 24 in a Du Bois, Pa., hospital of injuries received in an auto accident. Mr. Rugg has been employed by the Pennsylvania Grade Crude Oil Association since 1936.

Refinery Expansion

Workmen entering the Fort Worth, Tex., plant of the Sinclair Refining Co. pass through this scene. The cost of the park's maintenance is amply returned through the pride of workmanship shown by the operators

Complete Tank Farm as Preliminary To Construction of Refinery

W. R. Davis & Co., of New York, headed by the man who arranged the barter of Mexican crude oil for German manufactured goods after expropriation, has completed a tank farm near Brownsville, Tex., a preliminary step to construction of a refinery nearby. Projected plans for the refinery call for expenditure of approximately $2,000,000.

Expansion of operating facilities at Brownsville and other points provided in a broad-scale program involve total expenditure of approximately $3,500,000.

In addition to the tank farm and refinery a repressuring and absorption plant in the Rincon field of Starr County costing about $750,000 is scheduled for completion January 1.

Some of the Rincon field acreage now held by Davis & Co. was purchased from Transwestern Oil Co. and Double D Oil Co. The field was originally opened as a gas-distillate field.

Unity Completes Enlargment Program at Kalispell Plant

BUTTE, Mont.—Unity Petroleum Corp. has completed overhauling and reconstructing its refinery at Kalispell, Mont., and equipment for making specification road oils has been added. Crude capacity of the plant was increased from 800 to 1,100 bbl. daily, and also a tetraethyl lead blending plant was added. The plant is processing Pondera crude and manufacturing road oils for state and federal contracts in northwestern Montana and northern Idaho.

Reorganization of Deep Rock Is Authorized

Reorganization of the Deep Rock Oil Corp., which has been in receivership since 1933, was authorized by Federal Judge F. E. Kennamer in Tulsa last week. A valuation of $15,600,000 was placed on the capital structure of the new company, of which Henry N. Greis, Tulsa, will be the new president.

Imperial Refining Co. to Consolidate With Mid-West Refiners, Inc.

MOUNT PLEASANT, Mich.—Imperial Refining Co. of Grand Rapids, Mich., will be consolidated with Mid-West Refiners, Inc., of Alma, in a merger program, B. J. Skinner, president of Mid-West, announced last week. Upon consummation of the deal and completion of a planned expansion program, Mid-West will have a daily crude capacity of 10,500 bbl. and a daily cracking capacity of 4,000 bbl., making it the largest independent refiner in Michigan. Mr. Skinner also stated that capitalization of the company would be increased to about $1,500,000, and common stock of $1 par to $500,000 and preferred at $25 to $320,000.

Present capacity of the Mid-West plant at Alma is 3,200 bbl. with a cracking capacity of 1,200 bbl., and skimming capacity of the Imperial plant at Grandville, 4,000 bbl. Contracts for installation of a 2,000-bbl. cracker at each of these plants has been signed, Mr. Skinner stated. The 2,000-bbl. topping plant of Northern Refining Co. at Alma is also being operated by Mid-West under lease.

Rothchild to Install Cracking And Polymerization Units

LOS ANGELES, Calif.—Rothchild Oil Co., of Santa Fe Springs, Calif., has signed a license agreement with Universal Oil Products Co. for a Dubbs cracking unit and a catalytic polymerization unit. They are to be installed in the present Rothchild refinery, a 3,000-bbl. skimming plant, and construction is to start at once. The refinery is now running 3,000 bbl. a day of Signal Hill and West Montebello crude.

The cracking and polymerization units are to be designed by Universal engineers and built by the Fluor Corp. of Los Angeles. The former is to be of two-coil design with rated capacity of 2,200 bbl. of mixed charging stock, consisting of reduced crude and kerosene distillate. The poly plant will be designed to produce polymer gasoline of 82-84 rating from 500,000 cu. ft. of cracked gas per day.

Tide Water Lets Contract For Vapor-Recovery Plant

Tide Water Associated Oil Co. has let a contract to Petroleum Engineering, Inc., of Tulsa, on a combination gasoline stabilizer and vapor-recovery plant for stabilization of 18,000 bbl. of gasoline and 7,500,000 cu. ft. of cracking-plant vapors per day, at its Bayonne, N. J., refinery. The unit is also designed to recover substantially all of the butane and 90 per cent of the propane contained in the charge.

Natural-Gas News

Natural-Gas Sales in May Show Increase Over May 1939

Sales of natural gas in May by utility companies reporting to the American Gas Association accounted for revenues totaling $36,721,600, an increase of 6.8 per cent compared to the same month last year.

Natural-gas consumption increased 10.8 per cent for domestic purposes and industrial sales gained 6.9 per cent.

Gas Allowables Reduced For Turner Valley Wells

Under a new order of the Alberta Conservation Board, effective August 1, allowable gas flow from 102 gas-naphtha wells in Turner Valley has been reduced to 95,632,000 cu. ft. daily. This figure is set as the absolute limit of gas production, and will not be permitted if the requirements for light, heat, and power can be met with a lesser quantity of gas. The order is designed to eliminate all wastage so far as gas wells are concerned. It does not affect crude producers, which depend on gas flow to lift the crude.

Fredell Has Contract for New Mexico Line

Construction of a pipe line by the New Mexico Gas Co. has recently been started at a cost of $80,000. The purpose of the line is to increase the capacity of the main trunk line from the San Juan basin to Albuquerque and Santa Fe. When completed the line is expected to practically double the capacity of the line. O. J. Fredell has been awarded contract for the pipeline work, which is to be completed in 40 days.

News of Pipe-Line Activity, which is usually found on this page, will be found on Pages 52-53.

Drilling for Gas Increases In Brookville, Pa., Area

Drilling operations in the natural-gas area surrounding Brookville, Pa., are at the highest peak in several seasons.

Among the more than 25 drilling operations in the Brookville district is the well drilled by Jefferson County Gas Co. north of Sugar Hill, Snyder County, on the Carrier tract, two wells near Rathmel, and a well being drilled by the United Natural Gas Co. south of Sigel, as well as wells drilled in the Hazen and Munderf areas.

The increase in operations in this section is the result of the gas shortage last winter in the northern section of the state.

Scale Removed at Biggers, Ark., Gas-Compressor Station

Mississippi River Fuel Corp. is having scale-removal operations carried on this week at the company's compressor station at Biggers, Ark., south of Pine Valley. Scale is to be removed from the water jackets of six 1,000-hp. compressor units. Work is being done by contract by Dowell, Inc., which will use two pump trucks and tanks in connection with the special chemical process employed. Two compressor units will be handled at a time. The entire scale-removing operation for this station will be completed within 24 hours. Special headers are being made for this work. Examination of the scale by X-ray had been conducted recently. It is reported that the company is planning to make changes in water-treating methods at this station.

International

Latin America . .

Protection Assured for Caribbean Refineries

THE protective arm of 21 American republics is practically assured for two of the world's largest refineries on insular possessions of Holland in the Caribbean Sea. Creation of a "trusteeship" of American nations for the administration of French and Dutch possessions in the Western Hemisphere for duration of the European war appeared certain of adoption at the Havana conference.

Decision of the American republics is of unparalleled importance to the international petroleum industry. The Netherland islands of Aruba and Curacao, part of the West Indies, are the unquestioned nerve center of the Venezuelan petroleum industry. Fall of the islands under the direct administration or influence of an unfriendly European power, as was their mother country's fate in June, would cause serious disalignment of international petroleum affairs.

The Lago Oil & Transport Co., Ltd., subsidiary of the Standard Oil Co. (New Jersey) has two refineries on Aruba. One plant is small and is operated only periodically, but the other constitutes probably the largest and most modern refinery outside the United States. The Lago refinery has a rated capacity of 285,000 bbl. of crude daily but on occasions more than 300,000 bbl. have been charged to stills in 24 hours.

The refinery of Curacaosche Petroleum Industrie Mij., a Shell subsidiary, at Emmastad on the island of Curacao, has a rated capacity of 200,000 bbl. daily, but is also capable of handling substantial overloads. The combined capacity of the Aruba and Curacao refineries is practically equal to the daily average crude-oil production in Venezuela. Raw material for the Netherland West Indian refineries comes chiefly from Venezuela although some is drawn from Colombia.

The plan for protection of European possessions in the Western Hemisphere is sufficiently liberal to include Trinidad if the necessity arises. Trinidad is the largest oil-producing colony in the British Empire. Daily average production from Trinidad fields is estimated at about 57,700 bbl. for the first half of this year. The island, just off the northeastern tip of Venezuela, has seven refineries with combined crude capacity of 79,300 bbl. daily. There are two modern plants included in the seven equipped with cracking facilities and one has a polymerization-hydrogenation combination for production of isooctane.

Argentina . .

Mendoza Gives Evidence Of Good Oil Possibilities

THE Province of Mendoza in the western part of Argentina yields evidence of being one of the most important producing districts in that country, according to members of a geophysical party who recently returned to the United States. No details were disclosed, but it was said that numerous structural features in the province offer attractive possibilities of containing petroleum reserves.

The Tupungato field, one of the newest developed by Yacimientos Petroliferos Fiscales, the government oil agency, is located in Mendoza. Plans are now under consideration for construction of a pipe line from Tupungato to the Atlantic seacoast, probably at Comodoro Rivadavia or Buenos Aires. Prospects for important new production are only fair, in the opinion of the American geophysicists, for the provinces of Salta, Jujuy and Chaco.

Argentina now produces approximately 55 per cent of its national petroleum requirements. The Y.P.F. organization is making every possible effort to overcome the deficiency.

Spain . .

Order Drastic Curtailment Of Gasoline Consumption

DRASTIC regulation of civil gasoline consumption has been ordered in Spain, effective August 1. The new regulations prohibit the operation of private automobiles in excess of 25 hp. Owners of less powerful automobiles may receive 1/5 gal. per horsepower each month. Foreign tourists may purchase unlimited quantities, but must acquire special tickets at the frontier at a cost of $2 a gallon which must be purchased with foreign currency. The new regulations also prohibit the use of gasoline for recreational boats.

Mexico . .

Sweeping Economies Ordered by Cardenas

THE long-contemplated decree ordering sweeping economies within the government-controlled oil industry has been issued by President Cardenas of Mexico. Economies proposed by Cardenas last week were less severe than previously discussed. The inevitable objection from labor syndicates to reduction of wages and benefits formed, however, before specific terms were made known.

The European war has cut off an export market for 30,000 to 40,000 bbl. daily of Mexican crude oil which previously went to Italy and Germany. Shipments to Germany ceased with the opening of the war last September. Movement of approximately 15,000 bbl. daily to Italy continued until the early part of June.

Reports from Mexico City are that Germany and Italy owe approximately $4,000,000 for petroleum shipped to the two European powers as credit against tankers and other goods which have not been delivered.

Among the economies ordered by the decree which was issued through the government petroleum agency were cuts in all salaries of 700 pesos ($140) or more a month; reduction of rent allowances and suspension of employes' savings allowances; reduction of vacations from 28 to 6 days a year; reduction of part-time workers and suspension of salary and expense allowances for various union committees.

The Mexican petroleum industry operated last year with a deficit of 22,000,000 pesos ($4,400,000) and for the first half of this year was said to have a deficit of about 16,000,000 pesos ($3,200,000). The Cardenas decree cited the collapse of Mexico's foreign oil market and the increase of wages and workers' benefits to 75,000,000 pesos ($5,000,000) a year.

Added to the current reversals of Mexican petroleum-marketing plans was the admission last week that negotiations for construction of the 150-mile transisthmus pipe line have hit an apparently insurmountable snag. American companies with whom negotiations had been carried on for construction of the line from Puerto Mexico to the Pacific port of Salina Cruz were said in Mexico City to have withdrawn from the plan. Officials of the Raymond Concrete Pipe Co. and the Raymond Concrete Pile Co. in New York denied a week ago that they were interested in the Mexican pipe-line scheme.

The pipe line, which would have paralleled an existing railroad right-of-way across the Isthmus of Tehuantepec, long has been considered the answer to Mexico's restricted petroleum market. Through the Salina Cruz port Mexico could make petroleum deliveries to Japanese interests in direct competition with California companies who now enjoy the market differential represented by Panama Canal tolls and the longer voyage to Mexico's Atlantic Coast ports.

Japan . .

Japanese 1940 Exports Estimated at 327,000 Bbl.

EXPORTS of Mexican petroleum to Japan for the first 6 months of 1940 are estimated at 327,000 bbl. by the Oil Producers Agency of California. The latest shipment reported consisted of 82,000 bbl. of Mexican crude which passed through Los Angeles Habor on July 24. The tanker Pericles stopped at Los Angeles to replenish her bunker fuel supply, which had been exhausted in making the trip from Tampico through the Panama Canal and up the western coast to California.

Rumania . .

Government Seizes Tankers and Barges

MORE than 50 oil barges and river tankers, owned by or under lease to British companies, have been seized by the Rumanian Government to insure delivery of Germany's petroleum demands over remainder of the summer. Rumanian officials followed up last week's confiscation of British and French companies' properties by commandeering the transportation facilities necessary to move approximately 1,500,000 bbl. of petroleum per month through the Danube River to Germany.

Several weeks ago Rumania commandeered 3,000 privately owned railroad tank cars, approximately a third of all those in the country, for overland delivery of petroleum to the Reich. Until the seizure of privately owned tank cars Germany had been compelled to furnish its own rolling stock.

Great Britain retaliated by seizing two Rumanian tankers anchored at Alexandria while discharging cargoes. Nationalization of the private properties of British and French oil companies in Rumania places the country in position to make delivery to Germany at the rate of more than 2,000,000 bbl. per month, provided transportation is adequate.

Service on Active Fields

Walker Field, Kent and Ottawa Counties, Michigan

Compiled by The Oil and Gas Journal

Approved name

Walker field.

Geographic location

The field extends some 6 miles west of the city limits of Grand Rapids, Mich.

Principal towns and cities near the field

Grand Rapids (population about 185,000) lies immediately east of the field.

Cities and towns where supply companies have branches

Several supply companies have stores at Grandville which is located 5 miles southwest of Grand Rapids and 3 miles from the center of the field.

Railways serving the area

The Pennsylvania branch line from Fort Wayne, Ind., to Mackinaw City passes through Grand Rapids. The Michigan Central has lines from Grand Rapids to Detroit and Elkhart, Ind. The Pere Marquette line from Grand Rapids to Chicago passes through Grandville and the southern part of the field. Other lines of the Pere Marquette connect with Detroit and Muskegon. The Grand Trunk also has lines to Detroit, Port Huron, Muskegon and Grand Haven.

Muskegon, Grand Haven and Holland are ports on Lake Michigan, and are thus connected with the Chicago and Gulf water transportation system. They are 38, 33 and 28 miles to the northwest, west, and southwest, respectively.

Character of roads

Grand Rapids is the center of a network of paved roads from all points in the peninsula of Michigan. State Highway 50 traverses the field from east to west, state Highway 21 to Holland parallels the Pere Marquette on the south side of the field and there are several other paved roads between Grand Rapids and the field. The west belt line, bypassing Grand Rapids, traverses the field from north to south. Butterworth Road is another important artery into the field.

Trucking companies

There are numerous trucking companies in Grand Rapids.

Hotels and other accommodations

Grand Rapids has several first-class modern hotels and other accommodations are plentiful.

Schools and churches

There are numerous schools and churches in Grand Rapids as in the neighboring small towns.

Electric power and gas companies

Electric power is furnished by Consumers Power Co. with power rates of from 5 cents to 1.5 cents per kw.-hr. Natural gas is supplied by Michigan Consolidated Gas Co. at rates from $1.20 to $0.456 per M.c.f. Gas is also available in the field.

DEVELOPMENT

Initial development

The first well drilled in the field was McCallum & Herr's No. 1 Storey in the SE SW SW Section 32-7n-12w. This well was completed on October 24, 1938, for 20 bbl., naturally. It was acidized on October 26, 1938, and was good for 50 bbl. after acidization.

The second test, and the real field opener was Smith Petroleum and Strom-Wagner's No. 1 Whalen in the NW SE SW Section 32-7n-12w which was completed on January 16, 1939, for 125 bbl. naturally and 337 bbl. after acid. Total depth was 1,829½ ft. in the Traverse lime pay (Devonian). Surface elevation is 658.2 ft.

Developments to date

The early part of 1939 was taken up by routine developments, with the high spot at Swanson Consolidated Oil Co.'s No. 1 Fletcher in the SE SW SE Section 32-7n-12w which flowed some 4,000 bbl. During this period some wells were drilled on locations of only a few acres, but spacing was fairly regular. In July 1939 the field was placed under proration with a flat allowable of 200 bbl. for 10-acre spacing pattern, which was reduced to 100 bbl. on September 13.

Drilling continued to the east and south of the discovery, which proved to be almost on the edge of the field and the largest well was brought in on May 25 in the NW Section 4-6n-12w. This was the Lenoran No. 1 Maynard and was good for 7,500 bbl. naturally.

By the beginning of July, the field was believed to be outlined, but on July 6 Voorhees Drilling Co.'s No. 1 Cummings in the SE cor. Section 30-7n-12w opened a northwest extension which has proved to be larger than the original field. At the present time drilling is moving along a northeast extension in Sections 27 and 28-6n-12w.

Separated from the Walker field by dry holes, there are two small productive areas, Tallmadge in Section 27-7n-13w and Wyoming in Sections 13, 14, 24 and 25-6n-12w. These pools are off the main structure and production is generally small and spotty.

Future development

Although apparently defined on all sides by dry holes, there are a number of edge and inside locations still to be drilled. The pay is spotty and it may be found that other new areas will be opened up, even outside the apparent present limits.

Only two tests have penetrated the lower Traverse formation, Wolverine Natural Gas Corp.'s No. 2 Orlik, SE NE NW Section 5-6n-12w, and the same company's No. 1 Whalen-Thelen, SE cor. Section 31-7n-12w. The first of these found the top of the Traverse at 1,762 ft. and bottomed at 2,045 ft., while the top of the Traverse in the second was at 1,786 ft. with a total depth of 2,140 ft. The Orlik well was plugged back to the main pay at the top of the Traverse, while the Whalen-Thelan was plugged and abandoned.

The Dundee, Monroe and Sylvania which are potential pays have not yet been adequately tested. Of these, the Dundee and Monroe produce elsewhere in the state, and encouraging shows have been found in the Sylvania, which is Lower Silurian in age and is a sand.

Completions and operations

There are 440 wells on production and 13 active drilling operations.

Operators with more than 15 producing wells are:

	Wells
Smith Petroleum and Strom-Wagner	47
Wolverine Natural Gas Corp.	40
Twin Drilling Co.	21
Ide & Glavin Development Co.	15
Certain-teed Products Co.	18
Welsh Oil Co.	18

Most of these operators also operate other wells in other partnerships. Only one major company has production in the field.

Discovery

Credit for discovery of the field goes to Maj. Edward B. Strom, of Strom-Wagner Oil Co. Newspaper records were searched back over a period of years and Baxter's "History of Grand Rapids" was also studied. These gave records of numerous water wells which had been drilled to the Marshall and Coldwater series, many before the Civil War. The earliest was drilled between 1838 and 1842. A deep well was drilled in 1887 to 2,340 ft. in the Salina (Upper Silurian) in the SE NW NW Section 36-7n-12w, about 2 miles northwest of the discovery well. This well logged salt water in several formations, but showed gas in shales above the Traverse, together with a small show of oil. The detailed geology was worked out by Paul Whitney, now president of Wolverine Natural Gas Corp., the

area was leased and a test started. Practically all of the acreage is held by local operators.

Geology

The Walker field lies on a definite northwest-southeast structure where it is intersected by a northeast-southwest cross fold. A small saddle separates the old field from the northwest extension, although there were no dry holes in this intervening area. The Wyoming and Tallmadge pools lie on other small local structures.

The outcropping formation is the Michigan series of upper Mississippian age which contains two small seams of gypsum from 2 to 10 ft. thick, about 50 ft. apart. These are absent on the crest of the structure and also give good indications of the structure. The surface material is largely gravel laid down as a deltaic formation along the old Grand River outlet for the waters of glacial times. Gravel and gypsum pits accordingly occupied a part of the field prior to development.

The Michigan series is separated from the Marshall series (Mississippian) by an unconformity. The Marshall consists of about 225 ft. of gray sandstone and shaly sand and carries much salt water. Below this is the Coldwater formation, consisting of soft gray shale with 25 to 35 ft. of limestone below. This is the principal marker in the field and is reddish in color, with associated red shales. It is generally referred to as the Red Rock.

The next formation is referred to as the "Berea" although it is not definitely correlated with that formation. It underlies the Red Rock unconformably and where present the upper member is a dolomite or a recemented dolomite with sand. This formation carries gas and contains an estimated reserve of 750,000,000 cu. ft. of gas. The lower member of the "Berea" is an oolitic limestone with dolomitic cores.

The next formations consist of the Ellsworth and Antrim shales. The former is a grey shale which grades downward into a darker more thickly bedded shale. The total thickness of the two formations is 635 ft. The Traverse shale follows with a thickness of from 40 to 50 ft., thinning on structure. The Traverse shale is followed by a dark grey shale 3 to 5 ft. thick which is regarded as a residual clay on the eroded top of the Traverse limestone.

The Traverse limestone, which is the pay horizon, contains a porous streak 3 to 5 ft. thick just below the top. Then follows chert and a lower pay from 19 to 35 ft. in the formation. Sometimes there is a third pay 35 to 45 ft. within the formation. This often carries water with the oil.

DRILLING CONDITIONS

Type drilling equipment

The great majority of the wells are drilled with spudders and machines. Three portable rotaries with collapsible A derricks and a heavy steam rotary are also used.

Fuel

Gas is the principal fuel, although some machines use gasoline engines. Some pumping equipment is now operated by electricity.

Speed and cost of drilling

Spudders complete in from 15 to 25 days at a cost of from $1.50 to $1.75 per foot. The rotaries reach the lime in from 5 to 10 days. Pipe is then set and the well completed with standard equipment. Contract price for rotary is $2.25 per foot.

Character of mud

Frequently trouble is encountered in carrying circulation through the Marshall and beet pulp is used. The Coldwater and Ellsworth provide good mud, although little attention is paid to mud.

Water supply

Surface water is found at 5 to 80 ft., depending upon elevation above the Grand River.

Size of hole and casing program

Where four strings are necessary, the practice is to set 10 in. drive pipe through the gypsum, then 8¼-in. through the Marshall, 6⅝-in. through the Berea gas sand and 5-in. above the pay. It is not generally found necessary to set all of these strings.

Shooting and acidizing

There have been no wells shot. Acidizing is general practice, with 1,000 or 2,000-gal. treatments, although there have been some 500 gal. and some 3,000 gal. used. Sometimes the two pays are acidized separately.

PRODUCTION PRACTICE

Method of producing oil

Seventy-five wells are still flowing, the balance being on the pump. Individual units are general, although there are some twins. The pumping units are generally operated by gas. Five and 7-hp. motors are being installed on several leases. Two plants generate their own electricity using natural gas and diesel motors.

Water conditions

About three-fourths of the leases have separators. There is some encroachment from the northeast, although most of the water appears to be connate. The water level is also higher on the northeast of the structure. The amount averages about 1 to 2 per cent, although some wells are flowing with as much as 10 per cent water.

Bottom-hole pressure

Original bottom-hole pressure was 800 lb. per sq. in. Wells go on the pump at about 350 lb. per sq. in. Over the flowing life of the wells, production is at the rate of about 43 bbl. per pound pressure drop, indicating an average recovery of some 25,000 bbl. per well, if this rate remains constant.

Paraffin

Much paraffin trouble is encountered and wells must be cleaned out about once a month. Flow lines are cleaned once in 20 days. Both scrapers and solvents are used.

Gas-oil ratio

The maximum is 2,500 to 3,500 cu. ft. per bbl. This high ratio is due to the fact that the upper pay carries gas which is produced with the oil. Often pressures are higher in this pay than in the main pay. Gas-oil ratios attributed to the main pay are from 400 to 1,000 cu. ft. per bbl.

GENERAL DATA

Field rules

By order of the state Department of Conservation, wells are located on a 10-acre spacing and are given a flat allowable of 100 bbl. Where spacing is less than 10 acres, allowables are reduced pro rata for the reduction in acreage. There are now 67 wells affected by proration.

Outlets

There are no oil pipe lines in the field, although some of the gas is piped to Muskegon. Oil is purchased by two local refineries, Imperial Refining Co., with two refineries totalling 3,000 bbl. capacity, and Marvel Refining Co. which operates a 1,500-bbl. refinery. Other purchasers transport their oil by truck or by tank car.

Storage

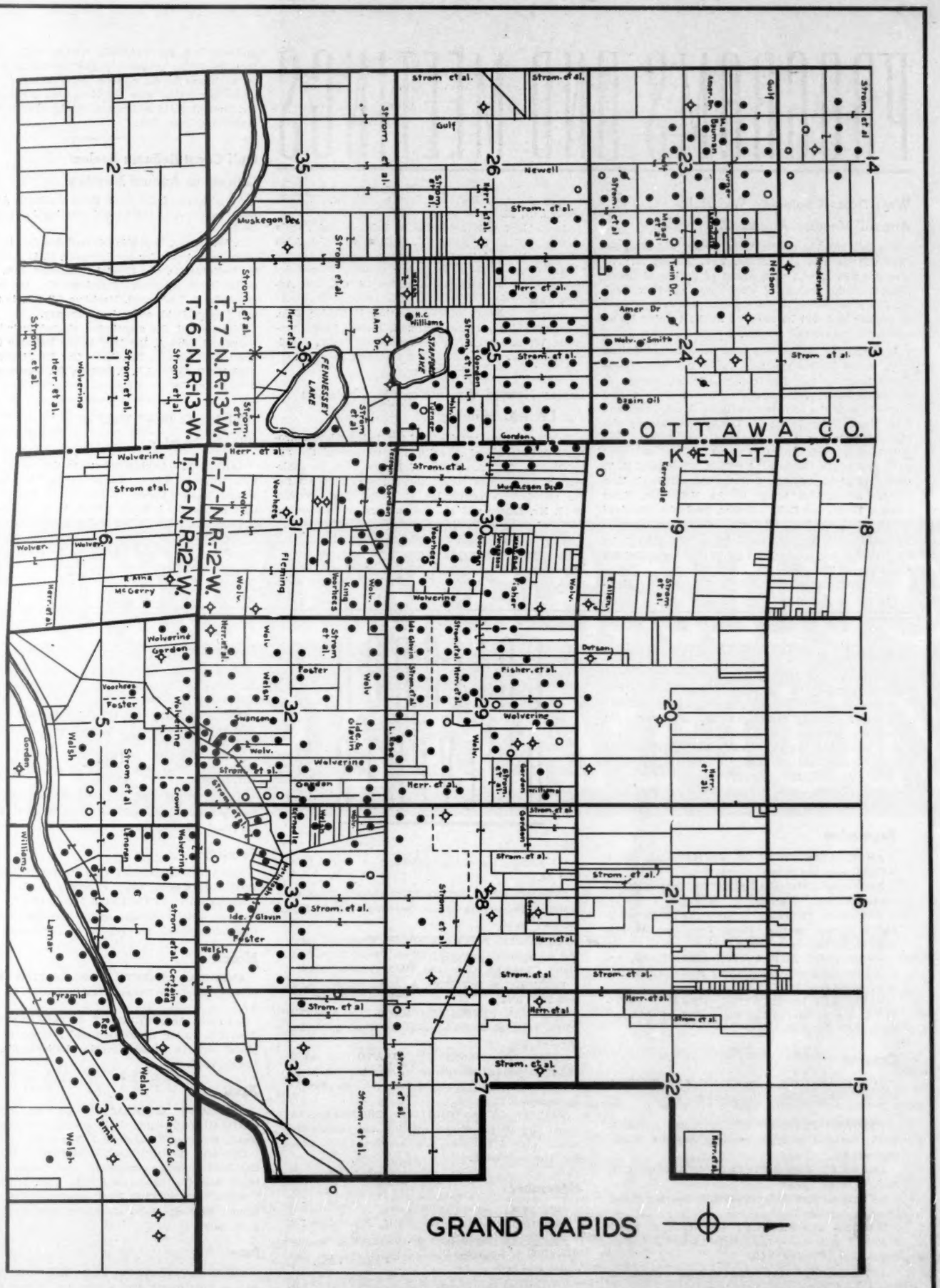
Oil is stored on leases in batteries from one to ten 500-bbl. tanks. Some leases also have 250-bbl. tanks.

Properties of crude

HEMPEL DISTILLATION ANALYSES*
WALKER CRUDE

Fraction—	Crude	350-e.p. gasoline	Kero-sene	Dis-tillate	No. 3 fuel	U.G.I. gas oil	Re-duced crude
Yield, vol. % crude	100	26.5	12	10	11.5	3.7	37.0
Gravity, A.P.I.	42.3	64.8	48.0	41.7	37.7	34.3	22.0
Flash, C.O.C.	.....	.....	.....	155	180	240	275
Sulfur, %	.51	.07	.05	.065	.15	.22	.95
Mercaptan sul., %	.....	.002	.005	.01	.....	.....	.....
B.s.&w.	Trace	.....	.....	.....	.....	.....	Trace
Pour, °F.	.....	.....	.....	30	+10	+40	+25
NACL, lb./1,000 bbl.	20.5	.....	.....	.....	.....	.....	.....
Vis., S.S.U. @ 100	.....	.....	.....	.....	.....	.....	600
Octane No., M.M.	.....	49.0	.....	.....	.....	.....	.....
Cetane	.....	.....	.....	.....	.....	62	.....
Distillation Engler:							
I.B.P.	105	98	330	338	328	305	.....
5%	172	144	372	375	375	469	.....
10%	217	162	384	392	395	516	.....
50%	515	230	406	435	543	608	.....
90%	747	304	472	512	659	670	.....
95%	760+	324	487	540	683	685	.....
End point	760+	350	503	560	703	725	.....
Recovery	96	97.5	98.0	98.0	98.0	98.0	.....
Bottoms	1.5	1.0	2.0	2.0	2.0	2.0	.....

*These observations were largely secured by laboratory analyses. The heavy cuts were obtained from plant operation.



Map of Walker field, Kent and Ottawa counties, Michigan

PROGRAMS AND MEETINGS

West Texas Geologists Will Hold Annual Meeting August 17

The fall meeting of the West Texas Geological Society will be held at Midland, Tex., August 17. The program will consist of a group of papers of timely interest on the geology of West Texas and New Mexico. The presentation of these papers will occupy most of the day and will be followed in the evening by an outdoor barbecue and smoker.

A partial list of the papers to be delivered follow:

"A Study of the Stratigraphy of the Ellenburger Formation," by Leo Hendricks, geologist, Bureau of Economic Geology, University of Texas.

"Position of the San Andres Group, West Texas and New Mexico," by Frank E. Lewis, consulting geologist, Midland, Tex.

"Whitehorse-San Andres Contact on and Adjacent to Central Basin Platform," by N. B. Winter and R. T. Cox, geologists, Atlantic Refining Co., Midland, Tex.

"Insoluble-Residue Study of the Holt Pay, Ector County, Texas," by C. M. Linehan, geologist, Standard Oil Co. of Texas, Midland, Tex.

"Photographs of the Sacramento Mountains," by Cary P. Butcher, geologist, Tide Water Associated Oil Co., Midland, Tex.

"The Producing Zones of Eddy County, New Mexico," by John A. Barnett, district engineer, U.S.G.S., Roswell, N. M.

"Insoluble Residues in the Whitehorse and Salado of New Mexico," by Ronald K. DeFord, geologist, Argo Oil Corp., Midland, Tex.

"The Page Field in Schleicher County, Texas," by Roscoe Simpson, geologist, Cardinal Oil Co., San Angelo, Tex.

General chairman of the meeting is Taylor Cole. Other committee chairmen are: E. Russell Lloyd, program; W. E. Daugherty, entertainment; W. L. Haseltine, arrangements, and Frank Gardner, publicity.

Lester Named Arrangements Chairman For I.P.A.A. Meeting

Frank Buttram, president of the Independent Petroleum Association of America, has announced the appointment of C. A. Lester, of Dallas, Tex., as chairman of the general committee on arrangements for the association's convention at Dallas, Tex., October 16-18. Mr. Lester will fill the vacancy created by the death of Edward B. Hopkins. Haynes B. Ownby has been named vice chairman of the committee.

It is possible that the above dates will not be adhered to, as directors meeting in Oklahoma City last week considered holding the meeting the first week in December. Joe Bridwell, Wichita Falls, Tex., said the association program might depend in large part on a change in the national administration, and suggested a meeting after the November general election. Mr. Buttram said a decision on the change would be made at a later date.

Gulf Coast Refiners Reelect Officers at Annual Meeting

All officers of the Gulf Coast Refiners Association were reelected at the annual meeting in Houston last week.

D. W. Hovey, Republic Oil Refining Co., is president of the association for another year. G. L. Rowsey, Taylor Refining Co. and Coastal Refineries, Inc., and Cornelius Kroll, Southport Petroleum Co., are vice presidents; L. F. Rothermel, Maritime Oil Co., is treasurer, and George Reid, executive secretary.

Directors of the association elected include the officers and John A. Bartlett, Amsco Refining Co.; F. E. Holsten, Chalmette Petroleum Co.; Ed Singer, Pontiac Refining Corp., and S. S. Seltzer, Jr., Southwestern Oil & Refining Co.

"Oil Man's Day" Held at Illinois Reunion

SALEM, Ill.—Paying tribute to the value of the oil industry in Illinois an "Oil Man's Day" was held at the annual Marion County Soldiers and Sailors Reunion here last week. A 2-mile parade through Salem began the day's activities, after which Earl W. Merritt, general chairman of the reunion, welcomed the oil men's delegation. Dr. Alfred H. Bell of the Illinois Geological Survey, addressed those in attendance on "Oil Exploration and the Landowner."

CALENDAR OF EVENTS

August

SOCIETY OF AUTOMOTIVE ENGINEERS, West Coast transportation and maintenance meeting, New Washington Hotel, Seattle, Wash., August 16-17.

WEST TEXAS GEOLOGICAL SOCIETY, fall meeting, Midland, Tex., August 17.

NATIONAL ASSOCIATION OF PETROLEUM RETAILERS, eighth annual convention, La Salle Hotel, Chicago, August 20-22.

MISSISSIPPI OIL EXPOSITION, Yazoo City, Miss., August 28-29.

September

AMERICAN SOCIETY OF MECHANICAL ENGINEERS, Spokane, Wash., September 3-5.

AMERICAN CHEMICAL SOCIETY, Detroit, Mich., September 9-13.

NATIONAL PETROLEUM ASSOCIATION, thirty-eighth annual meeting, Hotel Traymore, Atlantic City, N. J., September 18-20.

SOCIETY OF AUTOMOTIVE ENGINEERS, national tractor meeting, Schroeder Hotel, Milwaukee, Wis., September 24-25.

NATIONAL LUBRICATING GREASE INSTITUTE, annual convention, Stevens Hotel, Chicago, September 30-October 1.

October

NORTH AMERICAN GASOLINE TAX CONFERENCE, Whitley Hotel, Montgomery, Ala., October 3-5.

WESTERN PETROLEUM REFINERS ASSOCIATION, regional technical meeting, Wichita, Kans., October 4.

AMERICAN GAS ASSOCIATION, Atlantic City, N. J., October 7-10.

NATIONAL SAFETY CONGRESS, Stevens Hotel, Chicago, October 7-11.

INDIANA INDEPENDENT PETROLEUM ASSOCIATION, fall convention, Hotel Severin, Indianapolis, Ind., October 9-10.

AUTOMOBILE MANUFACTURERS ASSOCIATION, Auto Show, New York, October 12.

SOCIETY OF AUTOMOTIVE ENGINEERS, annual dinner, Hotel Commodore, New York, October 14.

INDEPENDENT PETROLEUM ASSOCIATION OF AMERICA, eleventh annual meeting, Dallas, Tex., October 16-18.

AMERICAN WELDING SOCIETY, annual meeting in conjunction with National Metal Exposition, Hotel Cleveland, Cleveland, Ohio, October 20-25.

PETROLEUM DIVISION, A.I.M.E., October 24, 25 and 26, Tulsa.

WESTERN PETROLEUM REFINERS ASSOCIATION, regional technical meeting, Shreveport, La., October 25.

TEXAS MID-CONTINENT OIL AND GAS ASSOCIATION, annual convention, celebrating Texas oil's forty-fifth birthday, Fort Worth, Tex., October 31-November 2.

SOCIETY OF AUTOMOTIVE ENGINEERS, national aircraft production meeting and engineering display, Hotel Biltmore, Los Angeles, Calif., October 31-November 2.

November

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, Los Angeles, Calif., November 7-8.

AMERICAN PETROLEUM INSTITUTE, twenty-first annual meeting, Stevens Hotel, Chicago, November 11-15.

ARKANSAS OIL DEALERS ASSOCIATION, Little Rock, Ark., November 14.

December

SEVENTEENTH EXPOSITION OF CHEMICAL INDUSTRIES, Grand Central Palace, New York, December 1-6.

AMERICAN INSTITUTE OF CHEMICAL ENGINEERS, New Orleans, La., December 2-6.

1941

January

SOCIETY OF AUTOMOTIVE ENGINEERS, annual meeting and engineering display, Book-Cadillac Hotel, Detroit, Mich., January 6-10.

February

IOWA INDEPENDENT OIL JOBBERS ASSOCIATION, Des Moines, Iowa, February 26-28.

AMERICAN PETROLEUM INSTITUTE, southwestern district regular spring meeting, Washington-Youree Hotel, Shreveport, La., February 27-28.

March

AMERICAN SOCIETY FOR TESTING MATERIALS, Hotel Mayflower, Washington, D. C., March 3-7.

INDIANA INDEPENDENT PETROLEUM ASSOCIATION, spring convention and refiners and suppliers' exhibit, Hotel Severin, Indianapolis, Ind., March 11-13.

April

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, twenty-sixth annual meeting, Rice Hotel, Houston, Tex., April 2, 3, and 4.

INDIANA INDEPENDENT PETROLEUM ASSOCIATION, spring convention and trade exhibit, Hotel Severin, Indianapolis, Ind., April 11-13.

NATIONAL PETROLEUM ASSOCIATION, semi-annual meeting, Hotel Cleveland, Cleveland, Ohio, April 24-25.

June

AMERICAN SOCIETY FOR TESTING MATERIALS, forty-fourth annual meeting, Palmer House, Chicago, June 23-27.

In oil fields where well spacing and depth of production permit its use as a method of lifting the oil to the surface, the geared central power offers a relatively efficient and economical pumping method. This installation is in the Hawley field of Jones County, West Central Texas, where wells are tripled on many locations. Well density and comparatively shallow depth make this means of production unusually attractive

ENGINEERING & OPERATION

AUGUST 1, 1940

In This Section

SYSTEMATIC STUDY OF RESERVOIR FOR EFFICIENT POOL OPERATION
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While most oil companies were originally organized with a rather sharp division between producing and geological departments, this setup has been found to limit use of geological records in solving of producing problems. Many companies, therefore, are giving more attention to combining all geologic and production data so that reservoir conditions may be better known.

SHELL'S MILEAGE MARATHON DEVELOPS INTERESTING DATA
By R. J. Greenshields and L. E. Heil ..... Page 33

Shell Oil Co., Inc., in 1939 inaugurated a free-for-all mileage marathon in which engineers of its Wood River laboratory tried by various means to obtain the greatest mileage from a given quantity of gasoline. In 1939 a record of 49.7 miles per gallon was obtained and this year it was raised to 55.7 miles per gallon, the contestants using personally owned stock cars.

APPLICATION OF TAPERED ROLLER BEARINGS TO OIL-FIELD USES
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Few classes of machinery are required to operate under more adverse conditions of operation and maintenance than oil-field equipment, thus selection of proper bearings is of great importance.

VAPOR BOMB CONNECTION SAVES PRESSURE GAGES
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EFFECT OF ATMOSPHERIC CONDITIONS ON DIESEL-ENGINE PERFORMANCE
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SUGGESTED FIELD PRACTICES, No. 7—By T. P. Sanders ..... Page 47

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Systematic Study of Reservoirs For Efficient Pool Operation

By T. P. SANDERS

THE production department of a major oil company in the Mid-Continent area makes a practice of developing a complete reservoir picture for all pools in which their operations are extensive. Data are collected from all available sources and compiled in a planned system of tables, charts, maps, and cross-sections, many of which have been especially developed by the department for striking presentation of existing conditions. The finished report, known as the pool study, is referred to in all cases where well changes are considered, and has proved especially valuable for arriving at equitable working agreements in unit operation of pools. In the past most of the pool-study work has been carried out in company headquarters, but it is now being concentrated at the field offices. It has been found that the field personnel, in collecting and compiling the necessary data, gain much useful knowledge of conditions in the pool in which they are operating. The essence of the pool study is to combine geologic information with operating data to obtain a true reservoir picture.

Information regarding the reservoir is divided into two groups, the first referring to the container, the second to the contents. The six common sources of information are:

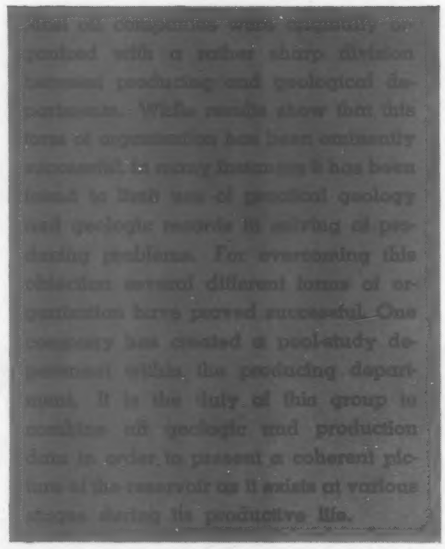
1. Drillers' logs
2. Geologists' logs
3. Drilling-time logs
4. Electric logs
5. Core descriptions
6. Core analyses.

The Container

Drillers' logs furnish no information as to sand characteristics, but they are often used to good advantage for correlating over short distances within the reservoir. They usually record the depths at which the bit passes from one type of formation into another with a fair degree of accuracy, and it has been found that if the stratigraphic changes and the intervals are used with little or no regard given to the formation description, a worthwhile picture of the producing interval is often developed. For older wells, drillers' logs may be practically the only source of information, but they become far less important on newer wells where more accurate data are available. Geologists' logs usually give some idea of formation characteristics, and make it possible to determine formation tops more accurately.

Drilling-time records are of greatest value when low core recovery is the rule, as in the case of a limestone reservoir. Devices are now available for recording drilling time automatically, thereby removing the human element.

The self-potential curve of the electric log shows the top and bottom of the porosity, but does not indicate the per cent porosity. This curve represents the potential set up between the electrodes of the instrument due to difference in salt concentrations between the formation water and the drilling fluid. Because porous sands contain more salt solution than the denser shales, this curve is an indicator of porosity. It may also represent the flow of drilling fluid into the formation under certain conditions, and thereby indicate permeability. It is important to recognize that the self-potential curve is entirely qualitative, and twice the potential does not mean twice the porosity.



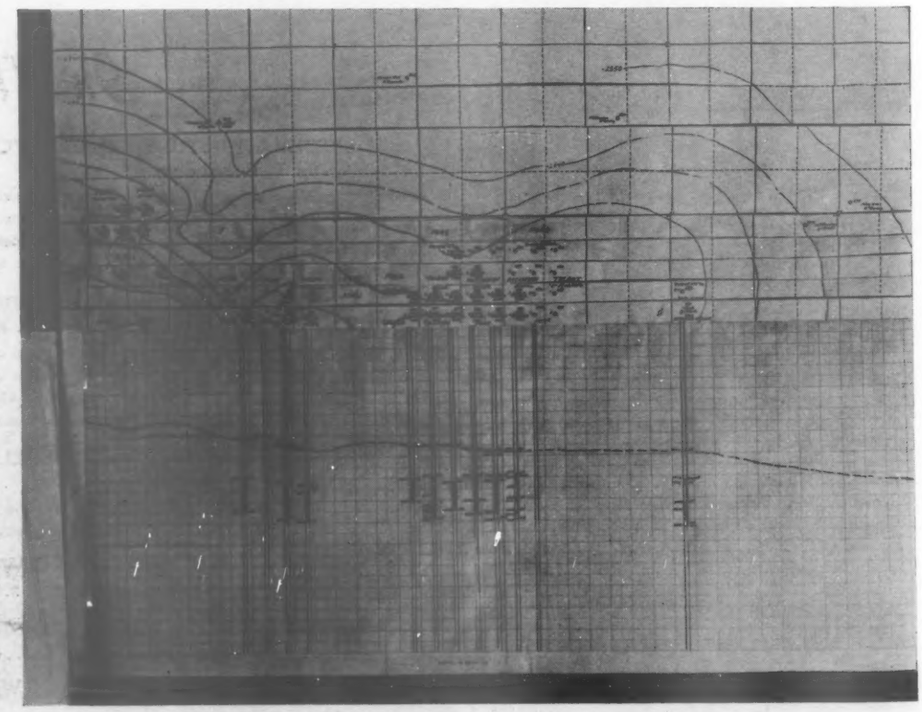
A careful description of the cores gives a picture of the producing interval as it looks to the geologist. A slight idea of comparative porosity can be obtained, but no estimate of permeability or consequent productivity is given. Laboratory analyses of cores is at present the only accurate means of measuring porosity and permeability; therefore, the most satisfactory record of the reservoir as a container is obtained only when continuous coring is carried on. This record of course represents the reservoir only at the well bore, and it is always necessary to interpolate for unknown conditions between the cored wells. Sometimes the extreme variation from well to well is put forward as a reason for neglecting accurate records at the individual wells. Yet it is obviously nearest the truth to interpolate between accurately known conditions in obtaining the reservoir picture.

For newly completed wells a graphic record is made of the producing interval using core analyses, electric logs, drilling-time records, casing records, and other pertinent data plotted on the same chart. All data pertaining to the reservoir as a container are shown on the left-hand side of the graph, while information having to do with the reservoir contents are plotted on the right-hand side.

The Reservoir Contents

Information as to the fluid content of the reservoir is obtained from electric logs, drill-stem tests,

Fig. 1—"Structural graph" with lower portion of contour map folded back to show one of the sections through the pool. This mapping system is sometimes used with complete electric logs for the entire pool shown on the sections. A section is made for each row of wells from east to west, or from north to south



core descriptions, core analyses and production tests. In cases where the well is allowed to produce during drilling of the productive interval, an additional and very valuable record is made available.

The electric-log "third" curve is usually used to distinguish between oil and water. It is a resistivity curve obtained from electrodes spaced farther apart to penetrate deeper and overcome somewhat the effect of invasion of the formation by drilling fluid. The high conductivity of salt water as compared to oil makes the two distinguishable on the curve. In certain formations the third curve has been found to be of no value, and here the temperature survey, which is made in conjunction with the electric-logging service, may give the desired information. Porous formations containing oil and gas show a cooling effect (negative anomaly), while salt water shows a heating effect.

Core descriptions reveal thickness of oil-saturated formations, and indicate contact between oil and underlying salt water. Laboratory analyses determine relative quantities of oil and water in the cores, salt content of the water, and gravity of the oil. The pressure core barrel now makes it possible to remove cores from the well under pressure in a sealed barrel, thus making results of core analyses more nearly representative of actual formation conditions. However, since the drilling fluid is still brought into contact with the core, allowances must be made for changes in core content.

Connate Water

Varying proportions of connate water are contained in oil sand. More than half of the pore space may be filled with water and still the well may produce oil only. In cores of sufficiently large diameter, determinations for per cent of connate water can best be made in the less permeable portions where the pores may be visibly free from contamination by drilling water. Such inner portions of the core are expected to give an accurate indication of water content.

Saturation of a core represents the per cent of pore space occupied by oil, but this per cent does not hold true for reservoir conditions. One of the most usable results of saturation tests is the sharply defined contact between oil and the overlying gas, if a gas cap is present.

When new pools are discovered, it is now common practice to sample the fluid in the bottom of the hole, testing it in the laboratory to determine the vapor pressure, the amount of gas in solution at various pressures, and the shrinkage progressively down to atmospheric pressure. The reservoir pressure is taken with a bottom-hole pressure bomb at the time the sample is obtained and if the vapor pressure of the fluid is much below the reservoir pressure the oil in the reservoir is known to be undersaturated with gas. If the more normal conditions is found, where the vapor pressure is equal to the reservoir pressure, then the oil is known to be fully saturated with gas, and it is probable that an initial gas cap exists. In old pools where the initial reservoir pressure was not measured, it can frequently be estimated closely enough for general purposes. The most common criterion upon which estimates are based is the hydrostatic pressure corresponding to the depth of the well. In the Gulf Coast the average reservoir pressure is 0.465 lb. per ft. of depth, which is slightly higher than the hydrostatic gradient of salt water occurring in the area.

In studying old pools where information is meager, all available data are set out in graphical form, and if a guess must be made this guess is at least based on best available information. An outline of a recent study will serve to indicate some of the graphic forms into which the data are converted:

The Burbank pool of approximately 2,150 wells and 21,000 acres was developed during the years 1922 to 1927. From drillers' logs and scout tickets a tabulation was prepared giving completion dates, elevations, tops of sand, tops of oil, base of oil sand, total depths, shot records, initial production, and present production of the individual wells.

Constructing Cross-Sections

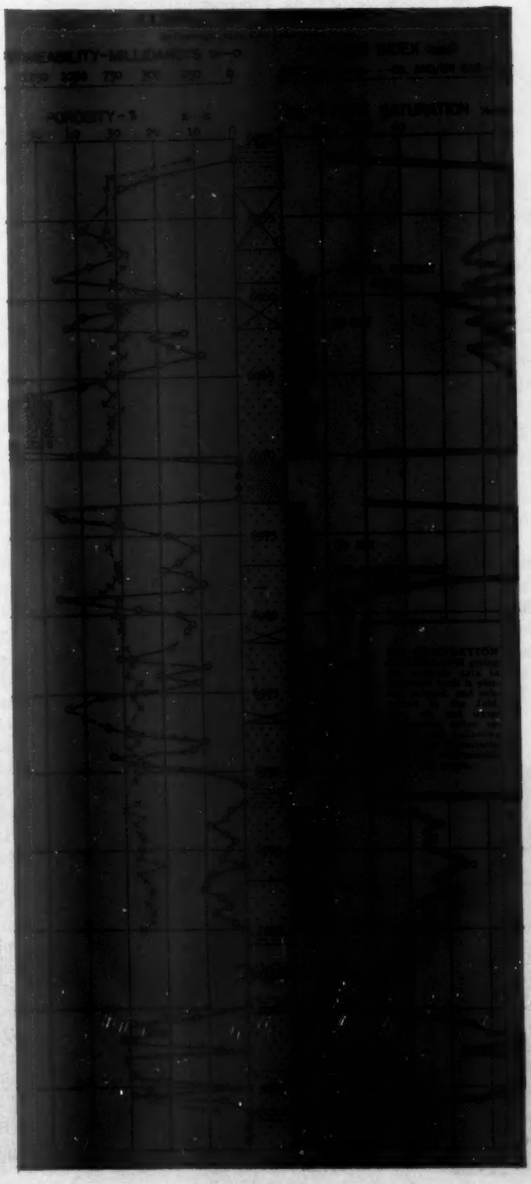
The next step was to construct 14 cross-sections at approximately equal intervals, and one longitudinal section. Most wells were not drilled to the base of the sand, but the base was determined by interpolating between those wells in which it was logged. Three contour maps were drawn, based primarily on these sections and representing the top of the sand, the bottom of the sand, and the thickness of the saturated sand.

The sand thickness or isobaric map is a picture of the gross volume of the reservoir. The volume of pore space is obtained by applying the estimated per cent porosity. From an estimate of per cent oil saturation the original quantity of oil in the reservoir was calculated.

Water Conditions

Study of water conditions in a pool is carried on by using both maps and cross-sections, and has proved to be a very worthwhile undertaking. The cross-sections bring out the water levels in the wells, and especially their relation to one another. The designation of water-producing wells on the structure-contour maps serves to indicate the geological relationship between water-encroachment areas. Too often in the past plug-back work for shutting off water has been carried on with only the individual well being considered. Chances for success or failure in water-control work can be predicted only with the complete water-encroachment picture for the reservoir in mind. Water maps as of two or more dates, separated by sufficient time intervals, will indicate the rate of water encroachment for a given rate of oil and gas withdrawal.

A method of recording core-analysis data during well completion. Drill-stem tests and electric-logging data are sometimes included on a chart with this information



Structural-Graph

An interesting and very useful type of map for study of water encroachment and other reservoir conditions is the "structural-graph," so named by its inventor, Raymond S. Hunt, president of Cryden Oil Co., of Mount Pleasant, Mich. It is a combination of a structure-contour map, a series of cross-sections through the field, and graphic logs of all the wells in the field. Fig. 1 shows an example of the structural-graph.

The structural-graph is made using a contour map of the pool, usually drawn to a scale of 4 in. to the mile, upon which all wells are shown. The contours are usually drawn on top of the pay, but in some cases some other horizon is considered more suitable. When the structure-contour map is complete, it is cut from east to west below each row of wells. Thus the map is divided into strips, each strip containing a row of wells. The margin at the left side of the map is not cut but is bound to hold the strips in position.

A sheet of graph paper is pasted to the back of each strip so that the graph paper will project under the lower portion of the map. The log for each well is then plotted on the graph paper directly below the location shown on the strip, and a cross-section is drawn through the logs. The logs used may be whatever is available, drillers' logs, geologists' logs, electric logs, or a combination of all logging information obtainable.

With the completed structural-graph, the structure-contour map of the field can be used as easily as before, but in addition it is possible to "look down the wells" so to speak. By merely turning back the portion of the map lying to the south of any particular well, the log of that well and its relationship to the wells east and west of it can be seen immediately.

While the structural-graph was invented by a geologist, it can be used most profitably by exploitation engineers and production men for studying water-encroachment conditions, gas-cap problems, repressuring and water-flooding projects, well-completion methods, and the presence or continuity of upper oil horizons. The complete pool record is bound into a folder so that it can be carried conveniently in the field, unlike

most graphic logs of this type and usage.

When data are complete enough a porosity-thickness map can be drawn, which is a picture of the amount of oil in place under each lease. The porosity is multiplied by the thickness of oil saturation and the "contours" are drawn on the product of these data.

Relative porosity and permeability have been presented indirectly for secondary recovery work by initial production and total oil recovery maps. Assuming equal porosity in two wells, the initial production is proportional to the permeability times the sand thickness. Decline in reservoir pressure must be considered so that initial potentials are compared only within a reasonable pressure decline.

Maps contoured on top of the sand are used for study of gas repressuring and recycling, since they show the highest points of porosity and thus the locations where gas caps will form. Maps contoured on the base of the sand are used for water-flooding considerations, since the flood would be expected to advance upward along the base of the sand.

Data Required

Below are tabulated the well data properly required from any pool:

1. Elevation.
2. Log: Casing.
   Depth of showings
   Water encountered
   Top of producing horizon
   Penetration
   Bottom of producing horizon
   Shot or acid record
   Total depth
3. Initial shut-in casing pressure.
4. Initial production or potential (both oil and gas).
5. Fluid levels, static, oil, and water.
6. Continuous record of production of oil, gas, and water. (Gas-oil ratio and water per cent from perodic tests).
7. Complete operating history, showing plug-backs, reperforating, shooting, acidizing, giving dates, depths, and production before and after.

New well-organized pools should, in addition to the above, provide the following:

1. Electric log.
2. Core description.
3. Core analysis.
4. Bottom-hole pressures.
   (*a*) As early as possible after discovery.
   (*b*) At regular intervals (monthly).
5. Bottom-hole fluid samples, initially and also later.
6. Productivity tests. Flowing bottom-hole pressures to determine pressure differentials at various rates of flow.

Field men who worked in the early development of an old pool constitute a source of information which is sometimes neglected. Discounting occasional exaggerations, the memories and private notes of these men frequently provide data of great value.

Gas-Oil Ratios

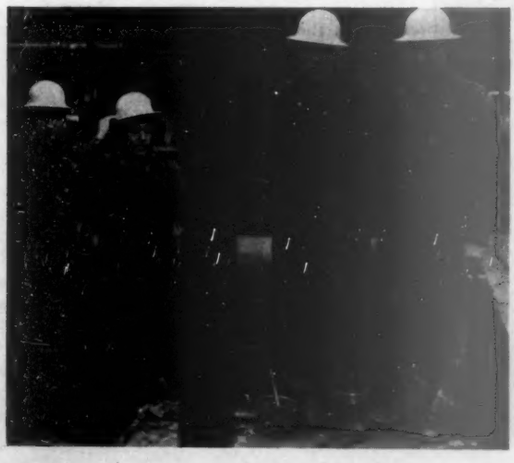
Although of the greatest value, gas-production records are usually the most difficult to obtain with any reasonable accuracy. Oil in a reservoir is of no commercial value unless there is some agent operating to bring it into the hole. This is usually pressure due to either gas in solution or a water drive. In either case gas in solution is needed to reduce the viscosity of the oil. Briefly stated, the less gas allowed to escape with the oil the longer the wells will flow and the greater will be the ultimate recovery of oil. This fact calls for frequent and accurate measurements of gas and oil produced from flowing wells so that the rate of flow can be properly regulated.

SAFETY — Hat May Save Life of Workman on Rig

BEFORE the introduction of the modern safety hat, many roughnecks and drillers wore "hard" hats while at work. One crew in Oklahoma City bought all the derby hats they could find after they had seen how one man, who was wearing a derby as a joke, avoided a serious head injury. The old sailor straw was widely used for summer time by roughnecks as it could absorb a fairly hard blow before its wearer would sustain an injury.

These makeshifts are a poor substitute for the regular safety hats now available in either the laminated fabric or metal models. Blows on the head are more common than many realize and the safety hats will minimize the damage, allowing the wearer to escape with a few cuts and bruises whereas he would suffer serious injury or death if he were wearing any other type of headgear.

A recent accident at Oklahoma City illustrates the difference in effect of an accident when wearing a well-designed safety hat and when wearing a common hat. A rod crew was pulling rods from a well when one of the sucker rods dropped from the hanger, striking one of the floormen. The blow was so severe that it knocked the man to the concrete floor and he suffered lacerations of the face. His safety hat was driven down on his brow with such force that his forehead was scratched and cut slightly. His head, however, was uninjured although his neck was sore as a result of the accident. Without the hat, a severe skull fracture, or possibly instantaneous death, would have been the result.



Wearing of safety hats by the entire crew is no license for carelessness as there are other parts of the body exposed and the dropping of some piece of equipment from above may break an arm, leg, shoulder or back. However, small pieces of equipment are always falling out of the derrick and may cause very serious injuries if they strike a workman on the head.

While the wearing of hard hats has been accepted by many men in the drilling and production departments, the practice is by no measure as widespread as it should be. Some companies pay no attention to whether their employes have the proper safety attire, others insist that they have such equipment; some furnish the hats at cost to their men and others furnish the men the hats free of charge. The latter seems the surest course to avert costly head injuries.

Questions and Answers

I have a lease with small wells about 440 ft. deep. The company on the adjoining property is using air for repressuring and my wells are being benefited to some extent. Would the use of vacuum on my wells increase the production? Can you give me some information on the use of vacuum for increasing the flow of wells?—W. S. C., Peoria, Ill.

In a repressure project the maximum benefits are gained by controlling the rate of injection and the rate of withdrawal. Also the injection pressure is generally the maximum possible and hence the application of a vacuum to your wells might not only reduce the effects of the repressuring as far as the neighboring property was concerned but might result in permanent and irreparable damage to your own wells.

This is due to the fact that the application of a vacuum on your wells would result in creating a pressure differential greater than that on the offsetting property and channeling would result. As soon as air broke through into your wells they would have to be repaired in the hope that the air could be shut off and normal production resumed. The sealing off of air, gas, or water in a repressuring project is often very difficult and in many cases impossible.

The most successful repressuring projects have been those in which the operators in the entire field cooperated although successes have been reported where one company or one group controlled a large portion of a particular pool. If possible, it would be best to arrive at some agreement with the offset operator with the hope of increasing the recoveries and the values of both properties. If this cannot be done it would be better to continue under the present arrangement where he has made an investment in repressure equipment and operation and you are harvesting much of the benefits. If the repressuring is discontinued, applying vacuum to the wells would probably increase their production. In fact, the percentage increase when applying vacuum to a well on natural production is much greater than applying vacuum to a well being repressured.

Two articles which appeared in The Oil and Gas Journal will be helpful in designing a vacuum system for your wells. They are as follows:

"Vacuum Plants Discourage Repressuring in Kentucky," by T. P. Sanders, Dec. 17, 1937, p. 41.

"Vacuum Applied to Oil Production," by Harry F. Simons, Apr. 6, 1939. p. 59.

Shell's Mileage Marathon Develops Interesting Data

By R. J. GREENSHIELDS* and L. E. HEBL†
Shell Oil Co., Inc., Wood River, Ill.

IN 1939, Shell Oil Co., Inc.'s research laboratory engineers inaugurated a unique free-for-all contest which proved to be of increasing interest this year. The contest, originally planned for the purpose of determining which of the engineers through his uncanny skill, superior knowledge, or slick cunning could drive his car the farthest on a measured quantity of regular grade gasoline, resulted in some phenomenal mileage for American cars. The 1939 winner, R. J. Greenshields, hung up a record of 49.7 miles per gallon in a 1933 Plymouth. The average of the entire group of 21 cars was 28.8. The contest, dubbed "Mileage Marathon" has now become an annual affair.

Results of this year's meet were more astounding. A 1940 Ford 85, driven by F. P. Baggerman, pushed the record up to 55.7 miles per gallon. The average of 20 entries this year was 37 miles per gallon. This increase in the average was largely due to the fact that those "also rans" who, prior to the 1939 race, believed their cars were unbeatable, learned to their dismay that 20 and 25 miles per gallon was not good enough to win. Consequently they spent considerable time in preparing their cars for the 1940 race, adjusting carburetors, spark distributors, wheel alignment, and whatnot.

The first mileage marathon held in 1939 was the result of a suggestion to conduct a contest where a group of engineers could get together on the common ground of their training and experience and indulge in a competitive sport. The idea furnished the spark which ignited the enthusiasm and imagination of the entire staff. Promotion of the marathon proceeded voluntarily and rules were developed that were agreeable to all entrants. Since the object of the contest is the maximum distance on a given quantity of fuel by any means available, very few rules are necessary. However, the cars must be the personal property of the contestant and only the power derived from the allotted gasoline can be used for propulsion. Minimum limits are placed on the viscosity of the engine, transmission, and differential oils to prevent damage to parts.

A closed route of 14.1 miles is specified and each of the cars entered is allotted an amount of fuel in accordance with its weight, in order to handicap the lighter cars. Enough fuel is apportioned theoretically to bring the contestant back to the starting point. However, the winner last year drove 27 miles. This year the distance covered by the winner was 31.1.

In true engineering style the handicap is calculated on a theoretical basis using published friction values based on actual road measurements. The determination of the quantity of gasoline involved consideration of the rolling friction, wind resistance, mechanical efficiency, and a number of assumptions. Using data given by Austin Wolf in a paper, "Practical Tractive-Ability Methods" (S.A.E. Transactions, Vol. 25, Page 298) the horsepower required to roll the car along the road was calculated.

An article by Prof. W. E. Lay of the University of Michigan, "Is 50 Miles Per Gallon Possible With Correct Streamlining?" (S.A.E. Transactions, Vol. 28, Page 177) provided the information necessary for calculating the horsepower requirements attributable to wind resistance, based on work carried out in the University of Michigan wind tunnel.

The value of the wind resistance coefficient was taken from data obtained at the General Motors proving ground where wind resistance tests were run on full-scale models. By starting with the identity gallon/mile = gallon/mile an equation was arrived at whereby the amount of gasoline required to propel the car was in the proper form for substitution.

$$\text{Gal./mi.} = \frac{\text{lb./b.hp.-hr.} \times \text{b.hp.}}{\text{lb./gal.} \times \text{mi./hr.}}$$

From experimental data obtained on the chassis dynamometer, the mechanical efficiency of an average car was chosen as 67 per cent. By com-

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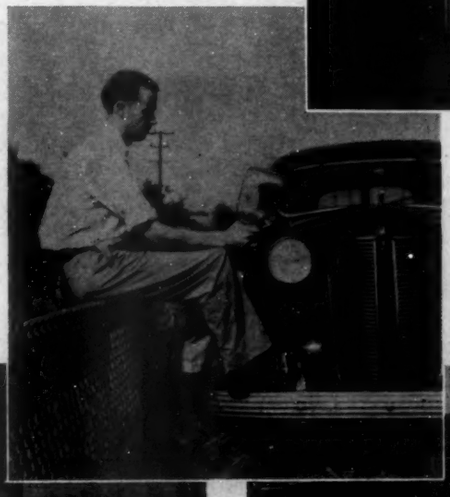
Below: After the car has been driven until the engine stops, the driver must wait for the judges' official car to measure the distance traveled. Right: This is the group of cars which participated in the mileage marathon and averaged 37.0 miles per gallon.



Below, left: Measured quantities of fuel are supplied the contestants according to the weight of their car, the lightest and heaviest cars receiving 0.368 and 0.860 gal., respectively, to run the 14.1- mile distance. Below: The regular gasoline line is disconnected and an auxiliary line run into the car. The carburetor is run dry before the test gasoline is given to entrant

bining the above information, the quantity of gasoline in cubic centimeters, Q could be readily calculated for a given car weight and distance to be traveled:

$$Q = \frac{\text{dist.} \times \text{cc./gal.} \times \text{lb./b.hp.-hr.} \times (CW + KAS^2)}{M \times E \times \text{lb./gal.} \times 375}$$

Where the distance is 14.1 miles, the specific fuel consumption of the engine is assumed to be 1 lb./b.hp.-hr., the rolling friction constant, C, is taken as 0.014 lb./lb. of load, with the weight of the car in pounds.

The wind resistance coefficient, K, is taken as 0.001.

The frontal area of the car, A, is assumed to be 23.5 sq. ft.

The speed, S, is assumed to be 20 m.p.h.

M is a coefficient inserted to correct for the fact that mileage is improved by clever driving. A value of 114 per cent was used.

E, the overall mechanical efficiency of the chassis, is taken as 67 per cent.

The constant, 375, is required in changing miles per hour to feet per minute and dividing by the number of foot-pounds per hour in 1 hp.

Kinks for Increasing Mileage

The 1939 marathon brought out many interesting and valuable kinks for increasing mileage. Needless to say, spark timing was adjusted to the point for maximum economy, and the carburetors were set nearly to the point where incipient missing occurred. In general, rolling friction was reduced to a minimum by inflating tires to 50 lb. per sq. in. and adjusting wheel alignment. Making use of the relationship between mileage and warming up of the engine discussed in an article, "Index for Fuel Volatility" (Hebl and Rendel, N.P.N., Page 36, July 24, 1935), the winning car had an exhaust-heated differential housing and an insulated crankcase and transmission. Thus, by first idling the engine, the mileage obtained at the start of the run was therefore that of a completely warmed-up engine. Engine temperatures were maintained at a maximum by shielding the radiators; also fans, water pumps, and generators were disconnected in most cases. This served two purposes: the horsepower necessary to drive this equipment was utilized in propelling the car and a high temperature could be maintained at low speed. High engine temperatures were considered necessary to reduce the viscous drag of the oil and to give better fuel distribution at lean mixture strength.

In the 1940 marathon the adjustment and engine conditions which were employed in the previous contest were used but the increase in the distance traveled by the winner and the remarkable increase in the average mileage was partly the result of a new technique for driving in such a contest. Since the minimum specific fuel consumption of an engine, in general, occurs at somewhere near full throttle and intermediate engine speeds, the winner accelerated at full throttle from 16 to 37 m.p.h. and then coasted to 16 m.p.h. with the ignition off. This procedure was adhered to on level road but with slight modifications as required on hills to obtain the maximum coasting distance. Other contestants used this principle to a lesser extent by climbing hills at nearly full throttle and then coasting, but for level-road driving, constant speeds were generally maintained. The choice of 16 to 37 m.p.h. was a judicious compromise between the proper engine speed for minimum specific fuel consumption and the rapid increase in wind resistance that occurs at higher car speeds.

The marathons of the past 2 years have demonstrated what can be done with stock cars by applying known facts concerning engine tune-up, operating conditions, and driving skill. However, the engineers are already planning for their marathon of 1941 and intend to open the contest to chemists by allowing experimental fuel blends, the drivers will be allowed to experiment with fuels designed to give increased miles per gallon. Some thought is being given to the idea of engineers and chemists teaming up for this contest.

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Petroleum From Nebraska Field Analyzed by Bureau of Mines

AN analysis of the oil from the second producing well in Nebraska has just been made by the Bureau of Mines, U. S. Department of the Interior. The discovery of crude oil in the southeast part of Nebraska has created much interest in the tri-state region where Nebraska, Kansas, and Missouri join, which is part of the Forest City basin. In November 1939 crude oil was found in a well drilled in Township 1n-16e, Richardson County, Nebraska. A second well about a half mile southeast of the discovery well began producing May 8, 1940. Both wells produce from the Hunton limestone (Devonian age), the first well at a depth of 2,276-81 ft. and the second at 2,217-30 ft.

Analysis of the sample from the second well, according to the Bureau of Mines Hempel method, indicates a gasoline content of approximately 10 per cent. This gasoline is deficient in the easily volatile portions, and is highly paraffinic. The kerosene, gas oil, and nonviscous lubricating distillates which constitute 50 per cent of the oil may be suitable for manufacture of burning oils, distillate fuel oils, and diesel-engine fuels. The sulfur content of the crude oil, 0.37 per cent, is relatively high for crude oil of this type. The sample analyzed by the Bureau of Mines appears to be similar in physical and chemical properties to some of the crude oil being produced in Michigan.

The complete analysis follows:

GENERAL CHARACTERISTICS

Specific gravity, 0.866 — A.P.I. gravity, 31.9°
Sulfer per cent, 0.37 — Color, greenish black
S. U. viscosity at 77° F., 125 sec.; at 100° F., 84 sec.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Distillation at atmospheric pressure, 749 mm.
First drop, 94° C. (201° F.)

Cut at °C.	Cut at °F.	Per cent	Sum per cent	Sp. gr. 60/60° F.	A.P.I. 60° F.	S.U. visc. 100° F.	Cloud test °F.
50	122	...	...	.....	....	...	...
75	167	...	...	.....	....	...	...
100	212	0.1	0.1	0.647	87.2	...	...
125	257	1.0	1.1	0.694	72.4	...	...
150	302	1.8	2.9	0.721	64.8	...	...
175	347	2.9	5.8	0.741	59.5	...	...
200	392	4.0	9.8	0.755	55.9	...	...
225	437	4.3	14.1	0.769	52.5	...	...
250	482	6.2	20.3	0.782	49.5	...	...
275	527	8.1	28.4	0.794	46.7	...	...
Distillation continued at 40 mm.:							
200	392	5.9	34.3	0.814	42.3	39	20
225	437	9.5	43.8	0.826	39.8	42	35
250	482	6.7	50.0	0.842	36.6	49	50
275	527	5.2	55.7	0.862	32.7	68	60
300	572	6.1	61.8	0.880	29.3	100	80
Residuum		38.0	99.8	0.956	16.5	...	...

Carbon residue of residuum 10.4 per cent; carbon residue of crude 4.0 per cent.

APPROXIMATE SUMMARY

	Per cent	Sp. gr.	°A.P.I.	Visc.
Light gasoline	0.1	0.647	87.2	.....
Total gasoline and naphtha	9.8	0.737	60.5	.....
Kerosene distillate ...	18.6	.784	49.0	.....
Gas oil	19.2	.826	39.8	.....
Nonviscous lubricating distillate	9.8	.843-.875	36.4-30.2	50-100
Medium lub. distillate	4.4	.875-.890	30.2-27.5	100-200
Viscous lub. distillate	...	...	....	Above 200
Residuum	38.0	.956	16.5	.....
Distillation loss	0.2	....	....	.....

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TWO TANKS COULD HOLD 364,000 BARRELS OF CRUDE

TWO of the largest (aboveground) steel oil-storage tanks ever erected in this country were recently completed for refinery crude-oil service. Each tank is 168 ft. in diameter, 46 ft. 2½-in. high and is able to hold 182,000 bbl. They were designed in accordance with the tentative recommendations of the American Petroleum Institute engineering subcommittee by the Graver Tank & Manufacturing Co., and are of riveted construction with the exception of the roofs which were welded.

The shell of each tank consists of six ring courses, most of which are 8 ft. wide. The first four rings are of double butt-strap design and the remaining two rings are lap riveted. The first ring is fabricated from 1-in. steel plate employing a B-6 design for the vertical seam which consists of six rows of rivets on each side of the center line or a total of 12 rows of rivets. Inside butt straps are 25/32 in. thick and 43½ in. wide. Rivets used in this butt-strap construction are 1¼-in. in diameter.

The second rings of the tanks were fabricated from 13/16-in. material with a B-6 double butt-strap seam. Inside butt straps on the rings measure ⅝-in. thick and 41 in. wide. Rivets used were 1⅛-in. in diameter. The third rings are 21/32 in. thick with a B-5 seam design and ⅞-in. rivets. The fourth rings are ½-in. thick with a B-4 seam design and ¾-in. rivets were used. The fifth rings were fabricated from ⅜-in. steel, triple lap-riveted with ¾-in. rivets and the sixth and last rings from ¼-in. plate with a single row of ⅝-in. rivets. By employing the B-6 type of butt strap it was possible to obtain a joint efficiency of slightly over 94 per cent. The accompanying picture shows the two tanks, although it is impossible to portray the immense size as compared with tanks of 80,000 and 120,000 bbl. capacities.

Operating Ideas

Engine Substructure Eliminated on Rotary Rig

A Gaines County drilling contractor has eliminated the engine substructure used on his rig by simply placing the engines, reversible clutch, and pump on a single skid on the ground. Chain from the reversible clutch to the drawworks sprocket is longer and runs in an almost vertical path. This arrangement operates satisfactorily, reduces the rigging-up time and facilitates repair work on the engines and on the transmission equipment.

Old Pipe Used for Stairway on Lease Tank Battery

Whenever used tank batteries are purchased, they often do not include stairways and sometimes new tanks are purchased less stairways. One must be provided if injuries are to be prevented. A Kansas operator, having a battery of two high 5,000-bbl. tanks, used 2-in. pipe and old tank steel to make a very satisfactory stairway. To make the steps more rigid and provide more welding contact, the front edge of the step has a 2-in. vertical strip made by bending the sheet metal. At the top the stairway is fastened to a small platform of sheet steel placed between the two tanks.

Old Chassis Used for Driving Centrifugal Pump

Instead of removing the engine from the frame and mounting it on a skid for driving a centrifugal water pump, one Illinois operator left the chassis of an old car intact and simply replaced the differential with a centrifugal pump. It can thus be towed to the river bank and put in operation in a few moments by merely connecting it to the suction and discharge lines.

Valve-Wheel Locks Prevent Tampering

To prevent tampering with the valves on a flowing well, one East Texas operator attaches chains and padlocks to the wheels. This prevents anyone from changing the adjustment of the valves while the well is on production and also deters anyone from stealing oil from the well.

Ditch Carries Bottoms to Treating Plant

Instead of attempting to pipe the viscous emulsion obtained from tank bottoms to the central treating plant, one Kansas operator uses a board ditch. The tank battery is located near the top of a hill while the treating plant is located at the bottom. Whenever it becomes necessary to clean the tanks, the stopcocks are opened and the emulsion emptied into the ditch. The same ditch is also used to carry the salt water from the gun barrel to the salt-water disposal pit, likewise at the bottom of the hill.

Application of Tapered Roller Bearings to Oil-Field Uses

By S. M. WECKSTEIN
Chief Engineer, Timken Roller Bearing Co., Canton, Ohio

IMPORTANCE of selecting proper bearings for oil-field equipment cannot be overemphasized, since there are few classes of machinery which are required to operate under more adverse conditions. In constant service, 24 hours a day, week after week, under most unfavorable conditions of operation and maintenance, oil-field machinery requires sturdy, dependable bearing equipment. Tapered roller bearings have been unusually successful and are especially suited to this service since they will carry all types of loads, radial, thrust, and all combinations of the two simultaneously. Shafts run true and are kept aligned permanently.

By replacing the sliding friction of plain bearings with smooth rolling motion, less power is needed to drive the machinery; dependable, trouble-free service is assured; and faster drilling is possible, while maintenance and repairs are negligible.

Mechanical Principle

Like many other noteworthy developments in the field of mechanics, the principle of the tapered roller bearing is remarkably simple. Essentially, it consists of constructing the rolling elements, as well as the raceways, on the principle of the cone, so that lines drawn coincident with the working surfaces of the rollers and races will all meet at a common point on the axis of the bearing.

The significance of this is at once apparent. Initially, true rolling motion is obtained, and, secondly, the bearing will handle all loads, radial, thrust or both in any combination. Furthermore, no greater number of parts are necessary than in other types of antifriction bearings; that is, an inner raceway, an outer raceway, the tapered rollers and the cage or roller retainer. These are designated as the cone, which it resembles from its mechanical profile construction; the cup which fits over the cone and rollers; the rollers, which roll between the cone and cup; and the cage, which retains the rollers, properly spaced about the cone.

This unit, shown in Fig. 1, is frequently selected for positions where it is necessary to secure the capacity of a two-row bearing, yet to obtain a simpler mounting than two standard, single-row bearings. It is also often used on the fixed end of a shaft when an allowance must be made for shaft expansion. In this case, the bearing used on the opposite end is usually one of the double-cup units so set up as to float.

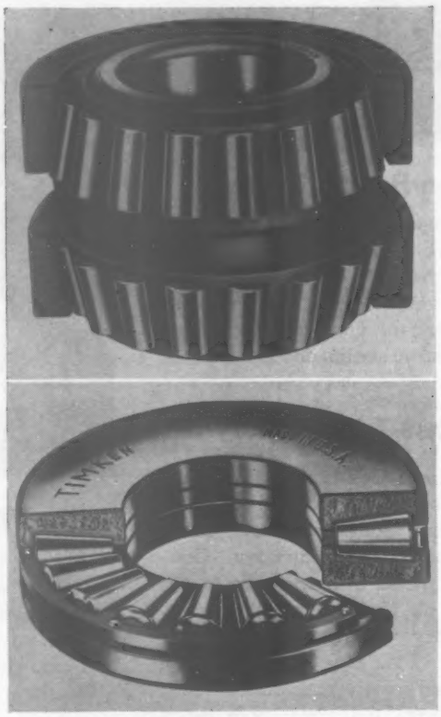


Fig. 1 (top): Two-row bearing, double cone, single cups, used in positions where the capacity of a two-row bearing is required along with a simpler design than may be obtained with two standard single-row bearings. Fig. 2 (bottom): Thrust bearings, heavy duty—developed for heavy duty, thrust loads only.

One variation of the standard single-row bearing described above is the two-row double-cup bearing. This unit employs a double cup with two conventional cones. Two assemblies are possible; both are identical excepting that in one case a spacer is introduced between the cones so that the setup, or running clearance, is established at the time the bearing is assembled. The other, having no cone spacer, requires that the proper setup be obtained by some form of adjusting device. Either form will give satisfactory service; the one having the spacer is usually preferred in those applications where the operating conditions are such that it is unnecessary to provide for takeup after a long period of service.

Allowing for Shaft Expansion

Numerous applications require that some provision be made to allow for shaft expansion. With this type of bearing, it is readily accomplished by securely locking the cones in position and permitting the cup to "float" in the housing. The cup at the opposite end of the shaft is usually fixed in position so that the movement is confined to one end.

In another construction again we have a double cup and two single cones. In this assembly, however, the cones are butted together so that when the unit is fixed in place the proper running clearance is provided. These bearings are suited particularly well to those assemblies where it is not desirable to provide means for takeup in service or where operating conditions require a fixed mounting at one end of an assembly and a certain amount of "float" at the other.

Although a combination of radial and thrust loads exists much more frequently than either a purely radial or purely thrust, yet there are numerous occasions where it is necessary to install a bearing to withstand thrust loads only. To meet this condition, a series known as the thrust-type bearing (Fig. 2) is available.

It would be impossible to illustrate in one article all the possible applications of tapered roller bearings to oil-producing equipment, but it is possible to show a few representative applications, for instance, to engines, reverse clutches, draw works, drilling-unit transmissions, rotaries, hooks, swivels, etc.

In a typical bearing application to an oil-field engine the cones are pressed against a shoulder

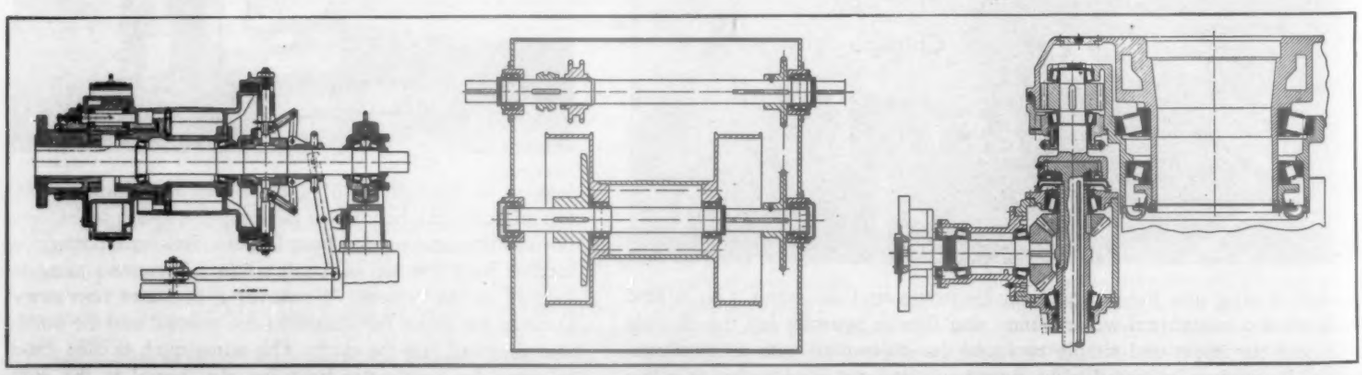


Fig. 3 (left): Standard reverse clutch with single-row tapered roller bearings used throughout. Fig. 4 (center): Draw-works assembly with two-row tapered bearings used at all positions. Fig. 5 (right): Rotary design with single-row bearings

of the crankshaft. The cups are pressed into the end cups. The tapered roller bearing will be adequately lubricated by the oil splash from the crankcase. A simple annular grooved closure and flinger provides sufficient protection against oil leakage and entrance of foreign matter.

Bearing setup is by means of shims.

There are, of course, many variations of engine-bearing applications. In bearing applications to the crankshaft and crankpins of a two-cylinder vertical steam engine, two-row bearings are used throughout, those on the crankshaft using the double-cone bearings while those on the crankpin are single bearings using the indirect mounting. Oil lubrication is provided for the bearings by splash from the cranks.

Fig. 3 shows a standard reverse clutch with single-row tapered roller bearings used throughout. The bearings in the reversing pinions are set up by means of a cap-screw bearing against the end of the shaft. A standard hexagon nut locks the adjustment. A special follower sleeve threaded to the spider hub of the clutch sets up the bearings in the drive pulley. A pillow block supports the mechanism at one end, the other end being directly connected to the engine.

For Drawworks Assemblies

Two-row tapered roller bearings are shown in all positions on the draw works assembly, shown in Fig. 4. Nonadjusting tapered roller bearings are used at one end of the countershaft as well as one end of the drum shaft in order to provide for expansion and inaccuracies in machining. A similar bearing is used at one end of the drum mounting. Double-cone bearings are used in all other positions. Bearing setup on the double-cone bearings is made by means of shims.

A nonadjusting, steep-angle, tapered roller bearing unsupported radially is used to carry the clutch thrust in the typical drilling-unit transmission. The reversing mechanism is carried on single-row bearings, mounted in pairs. These bearings are adjusted by means of cup followers threaded into the bearing cartridges. A similar mounting is used adjacent to the clutch on the drive end. The power takeoff shaft is also mounted on two single-row bearings, indirectly mounted. A tapered bore double-row bearing mounted on a sleeve supports the pulley shaft on the outboard position.

All of the bearings shown in rotary design, Fig. 5, are single-row; those on the pinion shaft and on the rotary table are indirectly mounted and adjusted by means of nuts properly locked. The bevel-gear shaft and drive-pinion bearings are

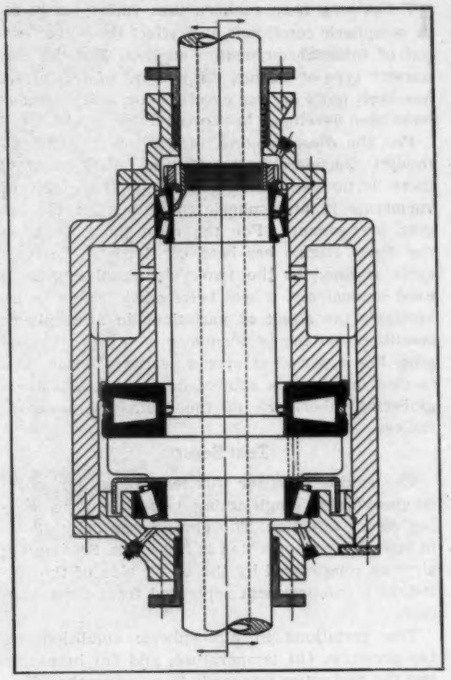


Fig. 6

set up by means of shims inserted between the cup carriers and the housing. Inasmuch as the bearings in these units operate under very adverse conditions, particular attention has been given to the closures to exclude foreign matter as well as to retain the lubricant.

Thrust Loads

The thrust load is carried on the flat tapered roller thrust bearing. A single-row bearing in the top position (Fig. 6) carries the upward thrust. The nonadjusting bearing in the lower position keeps the entire assembly in line. Alternate methods of adjusting the single-row bearing are shown to the right and left of the center line. In applications of this sort particular attention must be given to closures to prevent foreign matter from entering the bearings as well as to retain the lubricant.

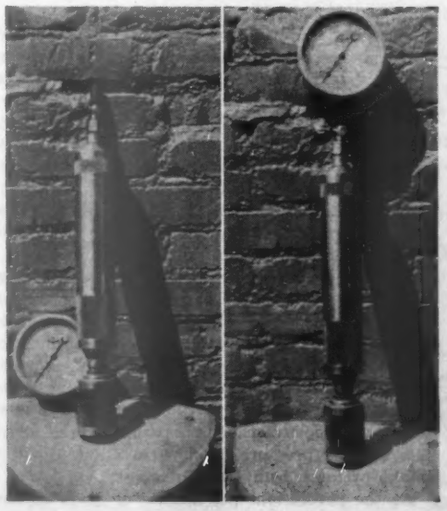
The usual single-reduction, chain-driven pumping unit features single-row tapered bearings mounted back to back on the drive shaft. The mounting is similar on the crankshaft although the bearings are separated by spacers to provide greater stability in the mounting. Two-row double-cone tapered-bore bearings mounted in self-aligning housings are used on the pitmans.

In a pumping power using single-row bearings in all positions, the bearings mounted on the pinion shaft are set up by means of double nuts and a lock washer. The bearings on the crankshaft as well as in the crankpin are set up by means of shims. Those on the bevel-gear shaft are mounted directly and are set up by means of shims interposed between the cup follower and the case.

Vapor Bomb Connection Saves Pressure Gages

By DON ATTAWAY
Arkansas Fuel Oil Co.

In using the tentative test method for vapor pressures of petroleum products (Reid) as specified by A.S.T.M. D323-37T, the pressure gage is subjected to numerous and vigorous shakings. The specifications require that it be a Bourdon-type spring gage of tested quality 4½ to 5½ in. in diameter. Gage manufacturers have made a special item of this and its mechanism is necessarily delicate in order to acquire accuracy. Hair springs, linkage and the tube are of the best quality and finely fitted. Inverted shaking of the bomb with the gage attached subjects this mechanism to severe abuses. In plants where numerous vapor pressures are required daily, these gages literally take a "beating." So much so, in fact, that mercury columns are required in order to check the gage after each test as well as before.



(Left) Pressure bomb showing collar and 1/4-in. valve at head of bomb on which the gage is screwed to take pressure readings. (Right) Same bomb with gage in place.

In order to eliminate this severe treatment, the installation of a single fitting to the standard vapor-bomb assembly preserved and prolonged the life of the gages in actual use. The accompanying photograph shows a vapor-pressure-bomb assembly with a ¼-in. needle valve and collar inserted between the air chamber and the gage. Permission for use of this fitting is found in Paragraph 2, Item *a*, which states that other means of connecting the air chamber to the pressure gage may be employed providing that the volumetric capacity of the air and gasoline chambers remains in the ratio limits of 3.8 and 4.2 to 1 and that the entire assembly be free from leaks.

The procedure of the test remains the same except that the gage is not attached to the air chamber until the assembly has been closed in and is carried through the water-immersion requirements. The assembly may be shaken as many times as desired at intervals of not less than 2 minutes. After several shakings the assembly is removed from the bath; the pressure gage attached to the collar and the needle valve opened. This operation should be performed quickly to avoid cooling the bomb and its contents. The assembly is then returned to the water for not less than 2 minutes and the gage reading observed. The entire bomb may then be taken from the bath and given a vigorous shaking, returned to the bath for not less than 2 minutes and the gage reading observed. If this reading coincides with the previous reading, then the "uncorrected vapor pressure" has been obtained.

In a series of comparative tests made with a standard assembly and a needle-valve assembly, vapor pressures have been checked within 0.1 lb. This method eliminates the many severe shakings of the gage and reduces the wear and tear on gage parts to a minimum. The accuracy of the gage is preserved and life of the equipment prolonged.

Effect of Atmospheric Conditions On Diesel-Engine Performance

By JESSE S. DOOLITTLE
Assistant Professor of Mechanical Engineering, Pennsylvania State College*†

This paper presents the variations obtained in fuel rates and maximum power output of a two-cycle diesel engine when there were changes in the temperature, pressure, and humidity of the supply air and in the exhaust pressure. The author found the engine to be quite insensitive to any of these changes at light loads. At loads in excess of the load of minimum fuel rate, any changes in intake or exhaust conditions that affected the air supply to the engine measurably changed the fuel rate and maximum power output.

IT has long been realized that variations in atmospheric conditions may affect the power output of internal-combustion engines. For the carburetor type of engine, the amount of this effect has been more or less agreed upon and formulas have been developed to express this effect.[1]

For the diesel engine, on the other hand, although considerable work has been done,[2,3,4,5] there is no general agreement of the effect of variations in atmospheric conditions on the engine performance. For the most part, work on the diesel engine has been confined to the four-cycle engine. As the two-cycle diesel engine is used extensively, it was believed desirable to investigate the effect of variations in atmospheric conditions on the performance of a two-cycle engine. For a period of over a year, work has been carried out on this subject in the mechanical-engineering laboratory of the Pennsylvania State College.

Test Setup

The engine used for this test was a horizontal single-cylinder single-acting two-cycle type, having direct injection. The engine was 9 by 12 in. in size and was operated at 300 r.p.m. Scavenging air was compressed by the crank side of the piston, in a compartment separated from the crankcase.

The variations in atmospheric condition are (*a*) pressure, (*b*) temperature, and (*c*) humidity, and the test setup was made to measure the effect of these variables. In addition, the effects of variations in exhaust pressure could be studied.

Fig. 1 shows a schematic layout of the general setup. A surge chamber, about 1¾ ft. in diameter and 18 ft. in length, was connected to the intake of the engine by means of a 3-ft. length of 4-in. pipe. In the further end of this surge chamber was placed a finned-type heater. A water and steam supply, connected to the heater, permitted the obtaining of any air temperature at the engine intake between 70° and 120° F. A 3-in. valve at the intake of the surge chamber controlled the air flow to the chamber and regulated the air pressure at the engine intake. A steam line was run into the intake of the surge chamber to permit increasing the relative humidity of the incoming air to as high a value as 100 per cent if desired. To obtain air pressures above atmospheric, a compressed-air line was connected to the intake of the surge chamber. Baffles located in the surge chamber insured a uniform mixture going to the engine and trapped any water that might have condensed out.

Intake and exhaust pressures were measured by use of water manometers. The intake pressure was measured at the engine side of the surge chamber, and the exhaust pressure in the exhaust line, close to the engine. Wet and dry-bulb temperatures of the incoming air were measured by thermometers located in the 4-in. supply pipe, directly above the engine. The amount of fuel used was measured by use of a 1,000-cc. measuring burette, graduated in 10-cc. divisions. As the distance between divisions was about ¼ in., the amount of fuel used was determinable within ½ per cent when 350 cc. were used per run. The power output of the engine was measured by use of a prony brake. The maximum error in the measurement of the brake horsepower was about 1 per cent, this error due at the lower loads to the inability to read the load closer than ½ lb. and at the higher loads to the inability to control the brake load closer than 1 lb. The engine speed was regulated by a governor, which was adjusted before each run to about 300 r.p.m. The total revolutions per run were obtained by use of a revolution counter. The length of the runs was measured by a stop watch.

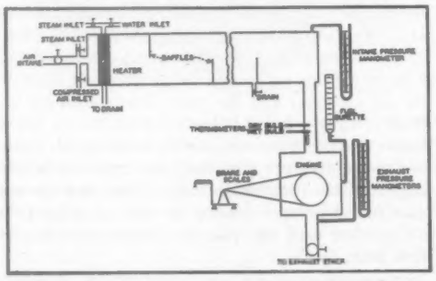


Fig. 1—Arrangement of apparatus to determine effect of atmospheric conditions of diesel-engine performance

Test Procedure

Before attempting the main runs, preliminary tests were made to find the effect of variations in injection-advance angle and also in injection-valve opening pressures. Over the range obtainable with the engine in operation, very little effect was found by a change in the injection-advance angle. Hence, this angle was set so that there was not an unreasonable amount of knocking for normal running conditions. This adjustment was not changed for the rest of the tests.

As it was found that both the fuel rate and the smoke in the exhaust were excessive at the recommended injection-valve opening pressure of 2,500 lb. per sq. in., this pressure was increased to about 2,900 lb. per sq. in. This pressure was maintained throughout the tests. Although somewhat better results were obtained with higher valve-opening pressures, the low fuel viscosity (32 Saybolt seconds at 100° F.) made it desirable to avoid these higher pressures. The valve-opening pressures were determined by use of a Bosch injection-pressure tester.

During all runs the jacket-water outlet temperature was kept at about 130° F. The length of runs varied somewhat with the load, averaging about 6 minutes. At least 350 cc. of fuel were used during each run. Care was taken to see that the engine had reached operating temperatures before any readings were made. Although the power output of the engine was changed in values of only 1 or 2 hp. at a time, the engine was held at the new load for a period of 5 to 10 minutes before readings were taken.

Preliminary Runs

Preliminary runs showed that the variations in exhaust pressure of ½ in. Hg did not appreciably affect the engine performance. As the normal variations in barometric pressure during the runs were not greater than this, the exhaust pressure was not controlled except in those runs where the effects of large variations were studied.

Three series of runs were made to study the effects of variations in (*a*) the humidity of the supply air, (*b*) the incoming-air temperature, and (*c*) the atmospheric pressure. For each run, with these variables held constant, fuel rates were obtained for at least 10 different loads varying from about 30 per cent of rated load to the maximum obtainable with steady operation.

To investigate the effect of humidity, runs were made with intake-air temperatures of 80° and 120° F. At 80° F. two series of runs were made, one having an incoming-air relative humidity of 48 per cent and the other a relative humidity of 90 per cent. At 120° F., relative humidities of 27 and 90 per cent were used. The intake-air pressure was held at 28 in. Hg absolute.

To study the effect of variations in intake-air temperatures, runs were made to obtain variations in fuel rate with load at intake-air temperatures of 80 and 120° F. Runs were also made with intake-air temperatures of 45° F. by taking air from outdoors but, unfortunately, it was not realized at the time that the most significant part of the fuel-rate curve was that at very high loads. By the time the importance of the high-load runs was discovered, outside temperatures were too high to obtain the desired air temperature.

The effect of intake-pressure variations was studied by varying the absolute intake pressure from 22.5 to 33.5 in. Hg, holding the exhaust pressure constant. To simulate increased barometric pressures, three series of runs were made with equal intake and exhaust pressures, varying from an absolute pressure of 29.4 to 31 in. Hg. A series of runs were also made by increasing the absolute exhaust pressure from 29 to 31 in. Hg, the intake pressure being held constant.

As the revolutions per minute of some of the foregoing runs varied as much as 8 r.p.m. from the mean value of 300 r.p.m., the engine was calibrated for the effect of speed. It was found that

*Presented at the national meeting of the oil and gas power division of the American Society of Mechanical Engineers, Asbury Park, N. J., June 19-22, 1940. Statements and opinions advanced in papers are to be understood as individual expressions of their authors, and not those of the society.

†Author's title: "Effect of Variations in Atmospheric Conditions on Diesel-Engine Performance."

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this small change in speed did not measurably affect the engine performance.

Effect on Air Supplied

A change in atmospheric conditions may affect two prime factors which influence engine performance, namely, the amount of air supplied to the engine and the work required to get the air into the combustion chamber. For maximum efficiency, there must be sufficient excess air present so that every particle of fuel comes in contact and can unite with a particle of oxygen as nearly as possible at a dead-center position of the piston. Providing that this minimum amount of excess air is present, any change in the air supplied should not materially change the efficiency of combustion. However, a decrease in the intake air below this minimum excess value results in incomplete combustion and an increased fuel rate. Furthermore, a decrease in the intake pressure or an increase in the exhaust pressure may increase the work required to get a given weight of air into the combustion cylinder and increase the fuel rate.

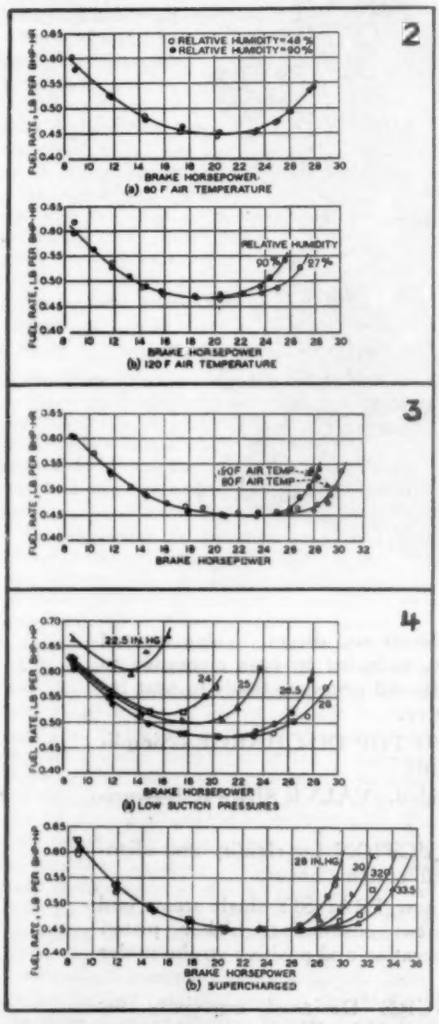

Fig. 2—Effect of relative humidity on engine performance. Fig. 3—Effect of variation in air temperature on engine performance. Fig. 4—Effect of variation in intake pressure on performance at atmospheric-exhaust pressure

Figs. 2 to 6 show that the results obtained substantiate this line of reasoning.

An increase in atmospheric humidity displaces some of the air in the engine cylinder; hence it decreases the amount of oxygen present. The maximum amount of vapor that can be present changes with temperature. At 80° F., standard barometer, and 100 per cent relative humidity, 3.5 per cent of the incoming air is water vapor, by volume. Thus, normal changes in atmospheric humidity at 80° F. cannot materially affect the oxygen supply to the engine and should not change the fuel rate or the maximum power output. Fig. 2*a* shows that test results confirm this line of reasoning. At 120° F., on the other hand, the incoming air may contain as much as 11.5 per cent water vapor, by volume; hence, the humidity may be large enough to affect the amount of oxygen present. At the lower loads, there is much excess air present and the decrease in oxygen content due to the increased amount of water vapor present does not measurably affect the fuel rate. At loads higher than the load of minimum fuel rate, there is normally a deficiency of oxygen in contact with the fuel; hence, any increase in water vapor increases this deficiency and causes the fuel rate to increase. This effect may be seen in Fig. 2*b*.

The same line of reasoning may be applied to the effect of variations in atmospheric temperatures. A change in air density as effected by a temperature change does not affect the fuel rate provided there is a large excess of air present. However, if the engine is so loaded that there is a deficiency of excess air, a change in air temperature will affect the amount of air present and the fuel rate will be changed. Fig. 3 shows this effect. Although not shown in Fig. 3, it was found that when runs were made at an inlet-air temperature of 45° F., the fuel rates obtained were the same as those at air temperatures of 80° and 120° F. at loads up to that load for minimum fuel rate.

Effect of Intake Pressure

Fig. 4 shows the effect of variations in intake pressure when the exhaust pressure is held constant. Fig. 4*a* illustrates the effect of long suction lines, suction lines containing valves, elbows, air filters, and other restrictions, and throttled intake, and shows that, at light loads, there is very little effect on fuel rate until the intake pressure is decreased more than 4 to 5 in. Hg below normal atmospheric pressure. With this low suction pressure, the combined effect of decreased oxygen supply and the larger pumping losses operate to increase the fuel rate. At high loads these two factors decrease the power output as the suction is increased and also increase the fuel rate. The results of supercharging are shown in Fig. 4*b*. It should be noted that no allowance has been made for the power required for the supercharging.

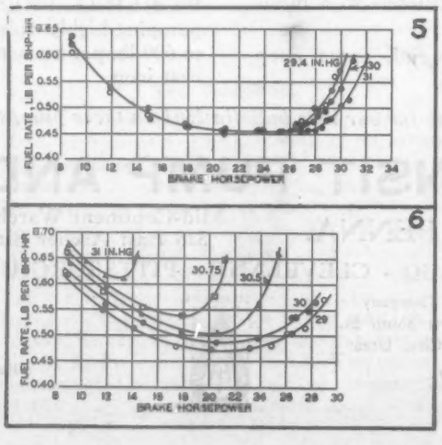

Fig. 5—Effect of variations in intake pressure on engine performance, with exhaust pressure equal to intake. Fig. 6—Effect of variation in exhaust pressure on engine performance at a constant intake pressure of 28 in. Hg

Within the range of these tests, an increase in the intake pressure produced no change on the fuel rates until high loads were reached. At the higher loads, due to an increase of the air supply to the cylinder with increased intake pressure, the deficiency of oxygen that formerly existed was eliminated; hence, the maximum power obtainable was increased, together with a decrease in fuel rate.

Fig. 5 shows the results obtained when both the intake and exhaust pressures were increased, such as might take place if the engine were used in a deep mine.

Although not comparable on an absolute basis, some conclusions may be drawn from a relative comparison of Figs. 4*b* and 5. The difference between these two figures is that for Fig. 5 the exhaust pressure was increased as the intake pressure increased, while for Fig. 4*b* the exhaust pressure remained unchanged. On this basis it appears that the engine performance is rather insensitive to changes in exhaust pressure.

Fig. 6 shows, however, that under certain conditions, a small change in exhaust pressure will cause a large decrease in power output and a corresponding increase in the fuel rate. It also shows that when the exhaust pressure was increased from 30 to 31 in. Hg (intake pressure remaining constant at 28 in. Hg), the fuel rate was increased 15 to 20 per cent and the maximum power output was halved. On the other hand, an increase in exhaust pressure from 29 to 30 in. Hg produced little change in maximum power and only about 4 per cent increase in the fuel rate. The reason for this is that the air flow to the engine is a function of the difference in the pressure in the main cylinder and the pressure of the compressed air in the precompression chamber. As the exhaust pressure is increased, the pressure in the main cylinder is increased and the pressure difference between the air in the precompression cylinder and the gases in the main cylinder is decreased. Because the flow of air varies as the square root of this pressure difference, a given drop in pressure does not produce much change in flow if the pressure differential is high but does cause a large change in flow when the pressure differential is small. Thus, when the pressure differential is large, the engine is rather insensitive to changes in exhaust pressure. However, as this pressure differential is decreased by building up the back pressure, the air flow falls off rapidly with the previously mentioned attendant results. These results show that long exhaust lines, exhaust lines with various fittings causing frictional resistance to flow, and partially closed valves may cause serious loss in power.

Fuel Rate

Within the range covered by these tests, it appears that if the engine were so loaded that changes in atmospheric conditions affected the fuel rate, the change in fuel rate was proportional to the change in oxygen content per unit volume of the atmosphere, providing the pressure difference between intake and exhaust was not changed. Thus, an increase in air temperature, an increase in humidity, or a decrease in atmospheric pressure that produced a given change in the oxygen content of a given volume of air, produced about the same increase in fuel rate at any one load. However, no general correlation can be made between fuel rates and air densities, as a given change in air density produces no measurable change in fuel rate at light loads, a small change at high loads, and a large change at maximum load.

Due to unknown reasons, it was impossible to duplicate results exactly when a test was repeated after a lapse of a month or so, even when apparently all conditions were duplicated. The deviations between fuel rates were insignificant at light

loads but varied up to as much as 6 per cent in some cases at the highest load. However, after a lapse of another month, original test results were duplicated in many cases. Because of this variation in engine performance, considerable care was taken to see that the results obtained when investigating any one variable were consistent and could be checked at any time throughout the series of runs with a maximum variation of 2½ per cent. Thus, the various curves in any one figure may be compared with similar curves in another figure.

Conclusions

It appears from the results of these tests that the outstanding factor affecting the performance of the two-cycle engine is the amount of air present in the cylinder at time of combustion. These results show that if sufficient air is present so that each particle of fuel may come in contact with oxygen at the desired time, other factors, such as air density, air temperature, and humidity, are immaterial. Thus, two general statements may be made, relating engine performance to the amount of air present:

1. If the engine is operated at loads lower than the load of minimum fuel rate, there may be changes in air density as high as 15 per cent without materially affecting the fuel rate.

2. If the engine is operated at loads in excess of the load giving minimum fuel rate, any change in intake-air pressure, temperature, or humidity, or exhaust pressure will influence the amount of air taken into the cylinder and, due to the insufficiency of air present under these conditions, will influence both the fuel rates and the maximum power output.

In addition, one more conclusion may be drawn which is particularly applicable to two-cycle engines, namely: If, due to the engine design, setup, or operation, the pressure differential between the scavenging air and main-cylinder pressure is abnormally small, then changes in either the exhaust or intake pressures will measurably affect the air flow to the engine and will change both the fuel rate and maximum power output.

Due to the fact that the rated horsepower of a given-size engine varies with the design of the engine as well as with the manufacturer, no single statement can be made concerning the effect of variations in atmospheric conditions on the performance of engines in general. However, it may be stated that if an engine is conservatively rated, i.e., at a load below the load of minimum fuel rate, normal changes in barometric pressure will not affect its performance up to rated load, and changes in elevation, at which the engine is operated, of 4,000 to 5,000 ft. may be made without measurably changing the engine performance. On the other hand, for the engine that is overrated, any change in barometric pressure, air temperature or humidity, or elevation will influence the fuel rate at rated load and may even prevent the engine delivering its rated load.

Acknowledgment

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Suggested FIELD PRACTICES . . No. 7

Connecting Hot Line Into Flume Improves Operation of Thermosiphon Treating Plant

By T. P. SANDERS

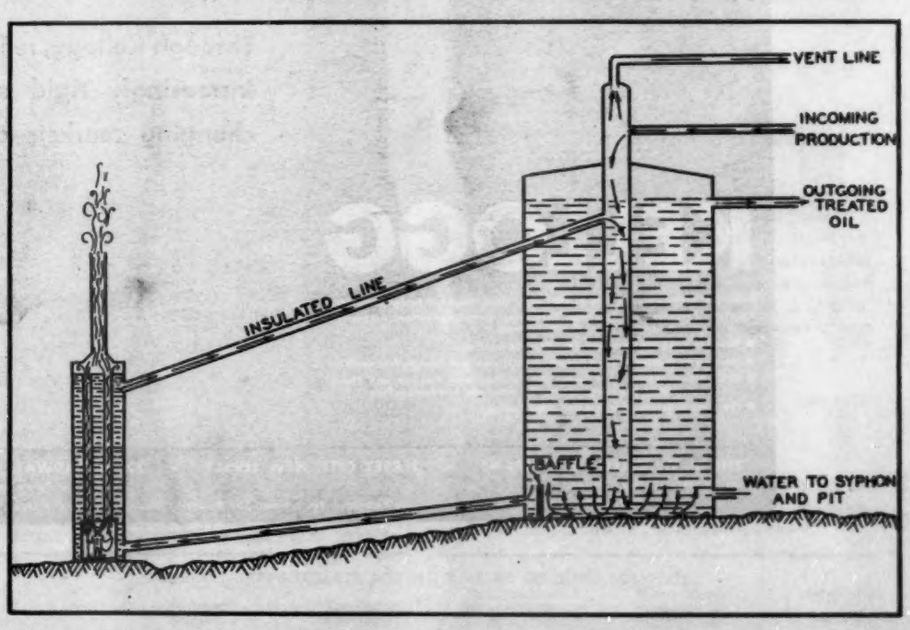
THERMOSIPHON heaters on crude-oil treating plants are not always satisfactory because the forces causing circulation of fluid are often too feeble to conduct the desired amount of heat to the gun barrel. (See Producing Equipment Directory, Page P-26.) However, the thermosiphon-type plant has advantages which often make its use desirable in spite of its low volumetric heating capacity. Since only the wash water from the gun barrel passes through the heater, fire hazard is practically eliminated, and there is little danger of overheating the oil. More treating compound may be necessary because of the lower treating temperature, but this lower temperature will usually result in treated oil of higher gravity, which will bring far more than enough additional revenue to pay the greater chemical costs.

If lease factors make the thermosiphon heater desirable, the design should attempt to overcome the inherent weakness of sluggish flow. Circulation lines between heater and gun barrel should be at least 6 in. in diameter, should be insulated, and should not include restrictions such as check valves or traps. The gun barrel should be insulated or made of wood, and the return line from the heater should enter the gun barrel at as high a level as possible, but never above the interface level of wash water and oil.

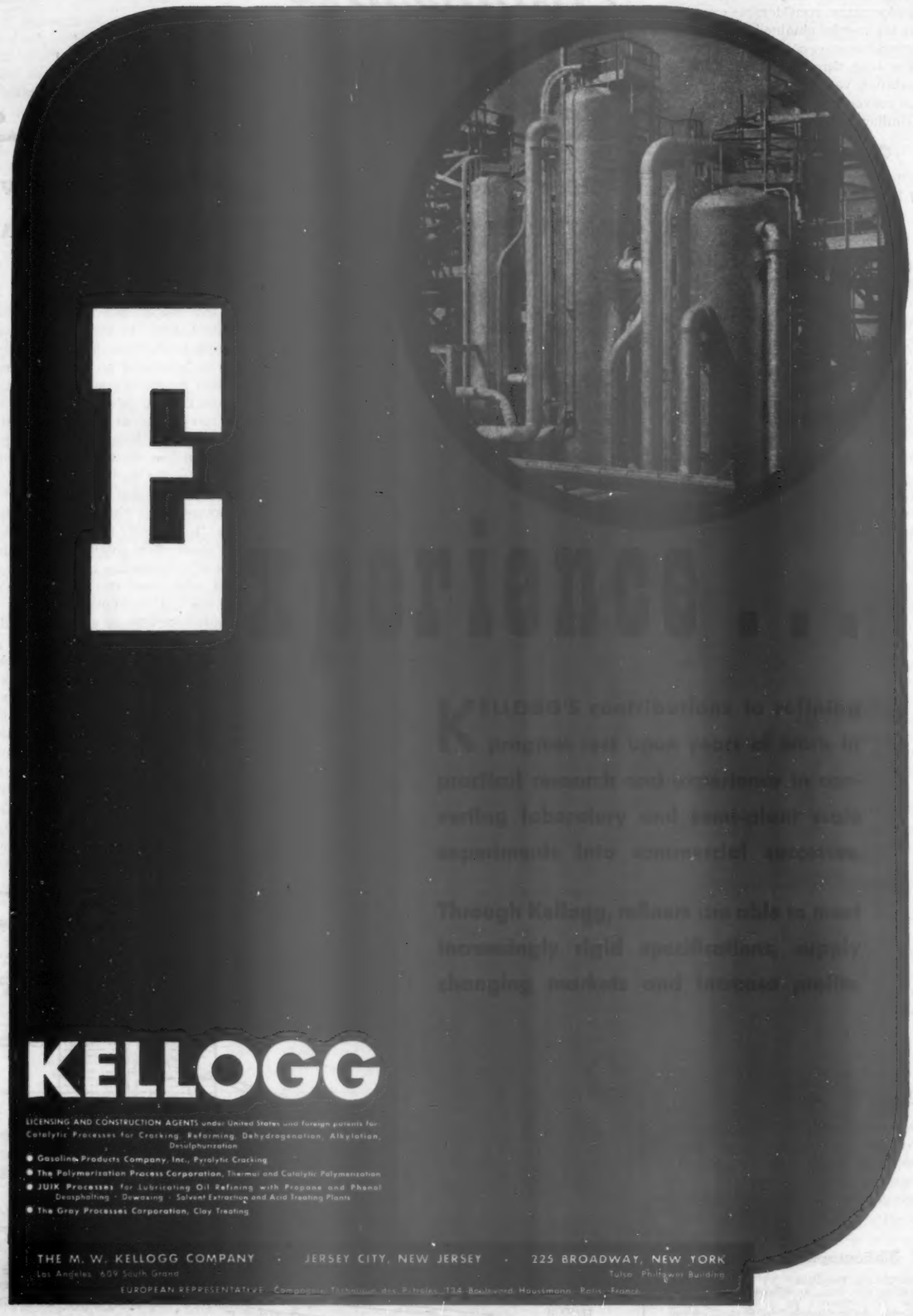
A comparatively new development which may serve to popularize the thermosiphon heater is the practice of discharging the heated wash water from the heater into the flume instead of into the gun barrel. In the flume it mixes with the incoming production, giving agitation where agitation is beneficial and contributing heat to the emulsion before it passes in the gun barrel. So far as is known, this arrangement has been beneficial in every plant in which it has been tried.

In the conventional thermosiphon treating plant the return line from the heater discharges into the wash water in the gun barrel. Cold production enters the gun barrel through spreaders at the bottom, and the emulsion must acquire all of its heat as it passes upward through the water wash. The chief action of the water wash is that of a coalescing medium, but the coalescing cannot take place until the emulsion is broken. Since the heat is applied to break the emulsion, it should logically be applied ahead of the water wash and not simultaneously. If the emulsion passes through the water wash unbroken, it will have to depend upon gravity to drop the water, and this may take place in the stock tanks.

A quiet gun barrel works best. Agitation caused by the heater discharge tends to hinder oil-water separation if it occurs in the gun barrel, but if this agitation takes place in the flume it helps to mix treating chemical more intimately with the emulsion. In some plants a circulating pump is used, or gas may be injected to speed up circulation through the heater. In such cases the effect of agitation becomes more noticeable.



Schematic diagram of thermosiphon treating plant showing return line from heater connected into flume. This serves to heat incoming production ahead of the water wash and confines agitation to the inside of the flume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QUESTIONS ON TECHNOLOGY

By W. L. NELSON, TECHNICAL EDITOR

Oxidation of Hydrogen Sulfide By Ammonia

We are planning on introducing ammonia into our crude-oil distillation system for removing hydrogen sulfide but we fear that the ammonia will accelerate the oxidation of the sulfide into free sulfur. This would be troublesome in our case because our gasoline contains scarcely any mercaptan sulfur, and hence the extra free sulfur could not be removed by the customary doctor treatment. Will the ammonia tend to accelerate the oxidation to free sulfur?—W. S. C., Jr.

Although the conception that ammonium sulfide or polysulfide is unstable is common because of experiences with reagent bottles in qualitative analysis laboratories, there seems to be no definite evidence to show that ammonium sulfide in the gaseous phase is more easily oxidized than hydrogen sulfide.

Indirect evidence also indicates that it is unlikely that there would be any considerable oxidation effect. German patents of the I.G. Farbenindustrie A.G. (C.A. 25, 1043, 1931 and 27, 3787, 1933) call for elevated temperatures and a catalyst if oxidation of gaseous hydrogen sulfide in the presence of ammonia is to be accomplished. Also, there have been many gasoline-refining methods which utilize ammonia and no mention of the oxidation of the sulfide has been made. These have been used on both straightrun and cracked products. Although patents of Rosenstein (U. S. 1974724 and 1974725) call for temperatures and pressures which would produce a liquid phase condition, these patents utilize ammonia and are for the purpose of extracting sulfur compounds and other impurities from cracked gasolines. E. R. Woodward's very complete paper on the use of ammonia for neutralizing in petroleum refining (The Oil and Gas Journal 33, No. 17, 39, 1934) does not mention the formation of free sulfur when using ammonia.

It would seem to be relatively inexpensive for you to try ammonia and see if free sulfur is produced. Should free sulfur be produced you could remove it by means of a caustic soda wash—or if you have some sour distillates, you could mix these with the straightrun product and thus get a balance between mercaptan sulfur and free sulfur that would permit use of doctor sweetening.

Increasing the Capacity of Gasoline Plants

How can we increase the capacity of our gasoline plant without great expense? The absorber cannot handle more gas nor successfully handle the vent gas that we find it necessary to recycle.—C. W. L.

If your absorber is working at its full capacity there is not much that can be done about it, particularly without more complete information. There are, however, a few factors which might be attempted or investigated as possible ways of alleviating the situation.

Although the absorber is probably overloaded by gas, the use of less absorption oil may relieve the load somewhat. This may be accomplished by cooling the oil after it has traveled about half way down the tower. The fact that the average oil temperature is lower will permit use of less oil.

A direct attack to the problem would be to handle the vent gases separately. A small absorber might be constructed for handling the stabilizer and stripper vent gases. The lean oil could be put over this absorber and then after cooling it would be sent to the main absorber as in the presaturation process described on Page 127 of the May Refiner and Natural Gasoline Manufacturer. The oil (rich) from the extra absorber could also be sent through the stripping still, or at least could be reduced to pipe-line pressure to eliminate as much gas at as small a loss of butanes as possible.

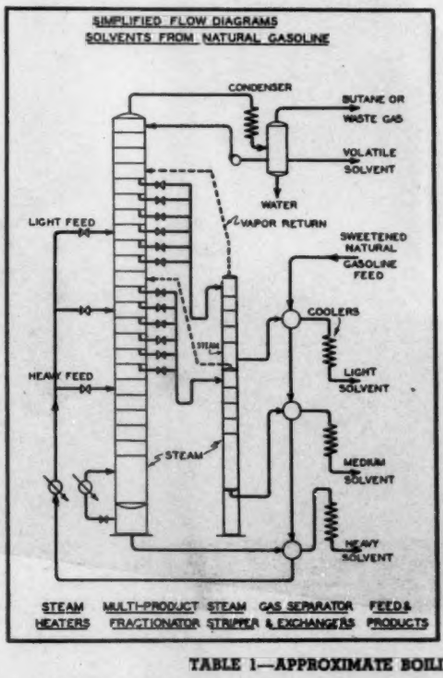
All of the above suggestions are of a most general nature and the particular situation must be carefully examined by a competent engineer before any changes are made.

Simplified Flow Diagrams

Solvents From Natural Gasoline

We are anxious to get information covering the manufacturing of solvents made from casing-head gas such as rubber solvent, cleaning solvent, paint solvent and such.—G. R. P.

The manufacture of solvents from casing-head gasoline is fundamentally the same as their manufacture from crude oil. As a preliminary step, however, it would be necessary to stabilize the casing-head or drip gasoline into a stable low-vapor-pressure material known as natural gasoline. This would be accomplished in a customary high-pressure fractionator or stabilizer such as that shown on Page 353 of "Petroleum Refinery Engineering," McGraw-Hill Book Co., Inc., New York. The removal of gaseous hydrocarbons from the casing-head gasoline to produce a stable gasoline is necessary in order to avoid excessive losses during subsequent processing operations.



By starting with a material such as natural gasoline, it should be possible to make commercial solvents directly from a single multiple-product fractionating tower as shown in the figure on this page. For large capacities a gas-fired pipe still would probably be more economical than the steam heaters shown in the diagram.

By means of such a system, any desirable combination of special solvents could be produced merely by changing the operating conditions and amounts withdrawn at the different draw plates. The end points of the materials would be regulated by the fractionation or amount of reflux used in the main tower, and the initial boiling points would be controlled by the amount of steam used in the side strippers. By making four primary raw solvent stocks and an overhead butane or light product, it would be possible to fill all sorts of orders by proper blending of the raw stocks.

Solvents of almost all boiling ranges are being marketed and hence all of the natural gasoline could be incorporated into solvents. The approximate boiling ranges of some solvents are shown in Table 1.

Solvents, such as paint thinners, paint removers and cellulose lacquer diluents probably could not be made because such solvents require relatively large amounts of aromatic hydrocarbons (25 to 45 per cent) and most natural gasolines do not contain aromatic hydrocarbons in large amounts.

Heat Absorption of Gasoline In Absorber Oil

What is the heat of absorption of the lighter hydrocarbons in mineral seal oil?—M. B.

Probably no experimental measurements of the heat of absorption or heat of solution of hydrocarbons in absorption oil have been made. However, technical men have felt that the heat of absorption is essentially the same as the latent heat of the hydrocarbons at the same temperature and pressure. The latent heat of the principle hydrocarbons at 80° F. are about as follows:

LATENT HEAT AT 80° F.

	B.t.u./lb.
Propena	138
n-Butane	152
n-Pentane	158
n-Hexane	158

These values of the latent heat (80° F.) should not be confused with the latent heats at the atmospheric boiling points of the hydrocarbons.

TABLE 1—APPROXIMATE BOILING RANGES OF SOME SOLVENTS

	Rubber cement	Seed and perfume	Paint remover dry cleaning, or tire manufacture	Floor, shoe and furniture polish	Stoddard dry cleaning
Initial boiling point, °F.	82	158	230	307	300
10 per cent	111	...	243	316	318
50 per cent	147	169	253	331	350
90 per cent	191	...	279	356	375
End point	222	194	320	383	410

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Pipe-Line Activity

Natural Gas Pipe Line Will Be Extended Toward Milwaukee

The Natural Gas Pipeline Co. of America will let contracts for major extensions to its pipe-line system. Construction will be carried forward as two projects: (1) Extension of facilities to northern Illinois and Wisconsin markets not now served with natural gas and (2) new pipe-line facilities extending into the Texas Panhandle and Hugoton gas fields.

The new construction, bringing gas from Kansas, Oklahoma, and Texas, will double the existing pipeline facilities and serve large markets in Illinois, Wisconsin, and other eastern states. Many new and important features of pipe-line construction will be embodied in the new line.

The developments announced today were contemplated when the 24-in. main line from the Texas Panhandle to Chicago was built but were delayed because of business conditions. A substantial part of the right-of-way for the Wisconsin line was acquired in 1932, the year the pipe line began operation. There will be no immediate public financing of the extensive construction program now getting under way. This will be met by the companies which hold ownership of the pipe-line company.

While the company is under the jurisdiction of the Federal Power Commission, the provisions of the Natural Gas Act do not require the company to secure a permit, as the new markets are not served with natural gas at the present time. The opinion rendered by the Federal Power Commission in the Montana-Dakota Utilities Co. case on June 18, 1940, supports this position.

The Natural Gas Pipeline Co. of America is jointly owned by major companies in the industry. Cities Service Co. owns 26.6 per cent; the Peoples Gas Light & Coke Co., 21.3 per cent; the Texas Corp., 17.5 per cent; Standard Oil Co., (New Jersey), 13.3 per cent; Southwestern Development Co., 13.3 per cent; Public Service Co. of Northern Illinois, 4.3 per cent; Columbian Carbon Co., 2.5 per cent; and Commonwealth Edison Co., 1 per cent. W. A. Jones, president of Cities Service Co., is president of the pipe-line company. Floyd C. Brown is vice president and general manager. Headquarters are in Chicago.

Cities and towns now receiving gas from the pipeline company include Chicago and the metropolitan district; Moline and Rock Island, Ill.; and Davenport, Cedar Rapids, Iowa City, and Ottumwa, Iowa.

As a first step in this program bids will be received August 12, for the construction of approximately 100 miles of line which will be mostly of 20-in. pipe. Work is to be completed in 150 days after letting of the contract. The new line will join the company's main trunk line which goes from Fritch in the Texas Panhandle to Chicago. The new line runs northeastward from the Geneseo compressor station to a point in McHenry County, Illinois, about 60 miles from Milwaukee. Pipe used for the main part of the construction line will be 9/32-in. wall thickness, 59.231 lb., which will be furnished in 40-ft. joints. The line is to be electric welded, of solid-welded construction; no chill rings are to be used. The stove-pipe method is to be employed. Ten streams are to be crossed, including the I.&M. Canal and the Kiswaukee River. Pipe is to be cleaned with a traveling cleaning machine and coated with enamel.

Basin Pipe Line Co. Installs Station

Basin Pipe Line Co. has erected a booster station near the southeast corner of Section 43, Block A.X., P.S.L. Survey, in the Gaines County portion of the Wasson field. The gathering system embraces 3½ miles of 6-in. and 16½ miles of 4-in. pipe and is connected to the leases of Continental Oil Co., Basin States Oil Co., Honolulu Oil Corp., Texas Pacific, and Amon G. Carter. The line has a rated daily capacity of 7,500 bbl., using a single booster station which is aided by an elevation drop of 1,100 ft.

The company recently ran the first shipment of oil from the Wasson field to the Cosden Petroleum Corp. at Big Spring, Tex. Crude from the field has been going into storage since July 15 preparatory to making the first shipments through the 97-mile pipe line which has been just completed.

Dempsey-Wilson Lay Pennsylvania Lines

Dempsey-Wilson Construction Co. is laying 8 miles of 16-in. line to be operated in moving oil from barges to the Atlantic Refining Co.'s plant at Philadelphia. This contractor is also laying 10 miles of 8-in. gasoline line for Tuscarora Oil Co. in the vicinity of Harrisburg and Duncannon, Pa. For this same company the contractor is taking up 18 miles of 6-in. Dempsey-Wilson Construction Co. is a partnership formed by O. E. Dempsey and Loy Wilson. The companies under which they formerly operated, Kelly-Dempsey & Co., and Superior Construction Co., have been discontinued.

Williams Brothers Corp. Opens Office at Brookville, Pa.

Work of constructing natural-gas lines for Manufacturers Light & Heat Co. will be directed from an office recently opened at Brookville, Pa., by Williams Brothers Corp., which has the contract. The line is now in process of construction.

The line will extend for 110 miles from Monaca, Pa., northwest of Pittsburgh, to a point near Olean, N. Y. Crews began laying pipe at the Iowa compressor sta-

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Pipe-Line Personalities . . . R. S. Ellison

R. S. ELLISON

ONE of the most widely known pipe-line operators of the petroleum industry is R. S. Ellison. As president of the Stanolind Pipe Line Co., pipe-line subsidiary of the Standard Oil Co. (Indiana), he directs the operations of one of the largest pipe-line systems of the petroleum industry.

Mr. Ellison taught school to put himself through the University of Indiana, from which he graduated in 1900. After being admitted to the Colorado bar in 1903, he entered into the practice of law under the difficulties confronting a lawyer in a city to which he came as a stranger. He became an active counsel for Midwest Refining Co. in 1906, and 9 years later was made chief counsel of the company. In 1919 he became vice president and was in charge of the field offices, Casper, Wyo., until 1930 when he became president of Stanolind Crude Oil Purchasing Co. Soon afterward he became president of Stanolind Pipe Line Co.

For years he has had deep interest in the Boy Scouts' organization and during the last 9 years he has been president of the Tulsa area council of Boy Scouts. His recreations are his saddle horse and books, particularly those concerning the Indians, traders and trappers of the 1820-1830 period of the Rocky Mountains and plains regions. He has written several monographs on subjects relating to such Americana.

tion near Brookville. Crews are expected to begin work in several different locations.

The line will extend from Monaca up to Rimersburg, thence on to Iowa and will cross the Lakes-to-Sea Highway about 3 miles east of Brookville and then go northeastward over the New York State line. W. D. Burdette will supervise the work for the gas company.

The company will make extensive improvements and additions to the Iowa station for operation at 800-lb. pressure. Equipment has been arriving from Illinois and Oklahoma. The line will transport natural gas from West Virginia to depleted fields in New York State and some gas may go eastward into New York City and New Jersey. This project is the largest undertaken in the natural-gas business in western Pennsylvania in a number of years.

Superior Is Nearing Completion Of Terminal Line in Indiana

Superior Oil Co. of California is nearing completion of a 26-mile 6-in. line from the New Harmony (Ribeyere Island) in Posey County, Indiana, to a river terminal at Mount Vernon, Ind. The river terminal is under construction on a 60-acre tract bordering on the Ohio River which Superior recently purchased for a reported $25,000. Two 80,000-bbl. tanks are under construction at the terminal site.

Superior is also installing a 4-in. line from New Harmony to the Albion pool in Wabash County, Illinois. The area along the Wabash River has received extensive development in the past few months and some good pools have been discovered. The line is primarily designed to handle Superior's own production in the area.

Cities Service Lays 50 Miles in Kansas

Cities Service Gas Co. is laying 50 miles of 12-in. pipe between the Cunningham gas field and Wichita, Kans. Work is being done by the company's own organization. Operations are being directed at present from Kingman, Kans. Before the line is put in service at the end of September, it will be tested with 800 lb. pressure. It will be operated at 700 lb. pressure. Construction is solid weld without chill ring. Pipe is 27.2 lb. in 40-ft. joints.

Right-of-Way Sought for Texas Oil Line

CRANE, Tex.—Texas-New Mexico Pipe Line Co. is obtaining right-of-way for an 8-in. oil pipe line to run from the Slaughter field, Hockley County, south to Crane, approximately 160 miles. The new line will intersect here with the company's trunk line that serves eastern New Mexico fields and transports the oil to Houston, Tex., it was stated. Construction will be started as soon as the survey is finished and right-of-way obtained.

Roy Jones of the pipe-line contracting firm of Jones & Brooks, Inc., Oklahoma City, is making his residence in Tulsa. Company headquarters will continue to be located at Oklahoma City.

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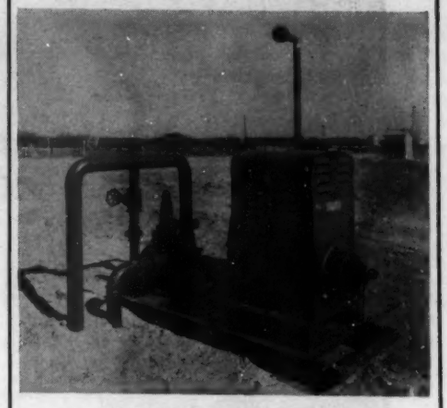

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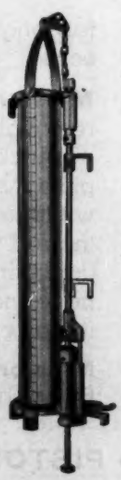

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FIELD OPERATIONS

Summarizing the Week's Developments

WEST TEXAS—The starting of several new wildcats in the three most closely watched wildcatting areas in West Texas centered the majority of attention in the district the past week. Two indicated field openers were testing, one each in Ward and Winkler counties.

NORTH TEXAS—Further indications of production at the southernmost prospect of the Fort Worth basin drew attention in the North Texas area. The wildcat which is indicating production is Walter Gant, 1 Laird, in extreme southern Montague County.

WEST CENTRAL TEXAS—The indications of a new discovery in Concho County, together with the starting and the abandoning of several important wildcats throughout other counties, featured the week's work in the West Central Texas area.

EASTERN TEXAS—After being shut in for about 3 months, Camp County's indicated field discovery, H. S. Moss, 1 Venters, was opened and tested last week. Production was believed possible, however, the magnitude was not known as the week closed.

TEXAS GULF COAST—Wildcatting is definitely on the increase as Nueces and Harris counties' tests show favorable prospects.

OKLAHOMA—A Prue sand discovery in Lincoln County and a Mississippi lime prospect in Garfield County are helping to divert attention to the northern part of the state and away from the Cumberland area where Pure's second well showed water in the McLish.

LA-ARK-TEX—With activity at a low ebb in Arkansas, operators are watching developments in the Waskom district of Texas where gas and distillate is being produced from deep pay.

CALIFORNIA—Interest is shifting back to the Los Angeles Basin as the prospective deep pay at Rosecrans is being tested and Montebello heads for lower levels.

ILLINOIS—Centralia's rocket-like rise to third place in the United States is being exceeded by its rapid decline. Last week, production from the field dropped nearly 35 per cent to below 50,000 bbl.

MICHIGAN—Discovery of Dundee production in the Yenior prospect, Arenac County, may give Michigan its first important new field of the year.

FOREST CITY BASIN—Missouri's prospective pool opener in Holt County shows no oil, while Nebraska's first commercial well qualifies for the state bonus with a margin of safety of over 200 per cent.

OHIO—Magnolia's deep test in northeast Ohio failed to develop Oriskany production as it found the sand void of fluid. It is headed for lower horizons.

Completions in All Fields

(Week Ended July 27, 1940)

	Oil	Gas	Dry	Total	1940 total comp. to date	1939 total comp. to date
N. Y., Pa., and W. Va.	81	18	6	105	2,299	1,801
Ohio	23	7	7	37	680	532
Indiana	5	0	7	12	230	137
Kentucky	7	0	10	17	292	386
Illinois	54	1	15	70	2,150	2,004
Michigan	5	2	14	21	724	771
Kansas	33	1	5	39	1,077	704
Oklahoma	19	3	21	43	1,095	1,082
Texas:						
North Central Texas	39	0	24	63	1,792	1,410
West Texas	31	0	2	33	1,233	1,080
Texas Panhandle	7	2	2	11	354	236
East Central Texas	4	0	1	5	293	436
East Texas Border	1	0	1	2	46	43
Gulf Coast Texas	31	0	3	34	753	789
Southwest Texas	47	3	17	67	1,297	1,343
Total Texas	160	5	50	215	5,768	5,337
North Louisiana	6	2	4	12	347	296
Gulf Coast Louisiana	29	1	9	39	577	338
Total Louisiana	35	3	13	51	924	634
Arkansas	2	0	1	3	116	145
Montana	4	0	1	5	108	84
Wyoming	1	0	2	3	68	57
Colorado	0	0	1	1	13	7
New Mexico	8	0	4	12	384	344
California	16	1	2	19	614	519
Total United States	453	41	159	653	16,552	14,544
Total previous week	344	48	125	517		
Week ended July 29, 1939	340	59	139	538		

Outstanding Fields—Highlights

(Week Ended July 27, 1940)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
K.M.A.	20	37	8	5,081	1,425	31,403
Wasson-Bennett	19	44	8	6,583	326	40,401
Ector County	9	17	10	10,863	899	43,746
Hull-Silk	12	23	3	1,944	315	8,700
Jones County	4	15	7	993	645	7,450
East Texas	8	12	3	120	25,994	449,035
OKLAHOMA						
Oklahoma City	0	10	0	0	856	98,300
Cement	2	11	0	0	319	7,080
KANSAS						
Bornholdt	1	17	5	9,634	95	5,596
Burnett	1	11	2	4,800	108	2,855
Silica	0	10	1	1,651	536	10,932
Trapp	2	13	1	1,789	559	12,288
NEW MEXICO						
Lea County	8	44	5	2,302	597	89,140
Eddy County	10	32	3	118	2,511	16,850
LA-ARK-TEX						
Cotton Valley, La. (deep)	0	3	0	0	162	13,550
Olla, La.	1	8	2	265	20	2,200
MICHIGAN						
Allegan County	3	22	1	50	504	7,681
Kent County	3	12	1	500	329	11,261
CALIFORNIA						
Montebello	0	12	0	0	348	19,050
ILLINOIS						
Salem	16	78	7	2,690	2,180	192,535
Centralia	0	13	10	5,489	762	49,721
Louden	10	35	10	1,612	1,557	74,352
Other basin fields	77	246	27	8,435	2,307	91,902
Old fields	....	.....	....	.....	.....	10,121
MISSISSIPPI						
Tinsley	2	5	1	104	65	9,405

ILLINOIS FIELD REPORT

By
STAFF CORRESPONDENT

Centralia Production Drops As Devonian Is Drilled Up

ILLINOIS production slumped for the fourth successive period to place the daily average production for the past week at 418,631 bbl., a drop of 45,485 bbl. from the preceding week, and of 99,593 bbl. during the past month. The flattening out of the decline is not yet in sight.

Salem field dropped 27,884 bbl., Centralia dropped 26,226 bbl., Louden dropped 295, bbl., Othio basin fields increased 10,697 and old fields increased 238 bbl. daily.

Texas Co. was making a definite effort to bolster the Salem field's falling production by working over Benoist and Aux Vases sand wells and McClosky lime wells. Many of the wells were deepened to the Aux Vases from the Benoist, deepened in the Aux Vases from 2 to 20 ft., or plugged back from the McClosky to the Aux Vases. In some cases very favorable results were obtained. The work required only a few days in each case being reported as a new operation and as a completion within 1 week's time. Cable-tool machines were used for the jobs.

Completions for the week were slightly below normal and only 54 new oil wells were reported for a total initial of 18,426 bbl. The Centralia field gave a dying kick to lead in initial production with 5,489 bbl. from 10 wells due to 2 large wells; no deduction is made for water and some of the wells made considerable quantities of water. White and Wayne counties again came into their own with six wells in the former for an initial of 1,239 bbl., and eight wells in the latter for an initial of 3,959 bbl. Marion County had seven new oil wells, all in the Salem field, for an initial of 2,890 bbl., and Fayette County had 14 new wells for a total initial of 2,190 bbl., 10 of the wells being in the Louden field and 4 of them in the St. James area.

Bond County got a gas well and also the promise of an oil well in the Benoist sand in the National Petroleum, 1 Spindler, which failed to produce from the Hoing (Misener) sand. Jasper County got a 746-bbl. well, Richland County had two wells for 648-bbl. initial, Wabash County had two wells for 470-bbl. initial, Edwards County had two wells for 670-bbl. initial, Gallatin County had a 60-bbl. well, and Washington County had a 65-bbl. completion in the Irvington pool.

Two gas input wells were reported in the Louden pool and two more in the Salem field. Fayette County had two dry holes, one of them in Louden. Montgomery County had two dry holes. Bond County got a duster. Jasper County had a failure as did Wayne, Wabash, Edwards, Monroe, Hamilton, and Massac counties. Clinton reported five dry holes, three of them in the Centralia field district.

Three locations were abandoned in the Louden field, one in the St. James field, one each in Lawrence, Monroe, and White counties. Two locations were abandoned in Centralia and four more tests were temporarily abandoned.

New work was scattered over the state, a total of 70 new operations being reported, 8 of them wildcats. Carter Oil Co. reported seven new tests in Louden and Ohio Oil Co. had one in St. James. Pure Oil Co. was starting one test in Jasper, one in Richland, and four in Wayne County, and independent operators accounted for two additional field tests in Wayne and one wildcat. Clinton County reported a wildcat, three new tests in the Hoffman pool, two in the Bartelso field, and four in Centralia. The Albion and Grayville pools in Edwards County each had a new operation. There was a new test in the New Harmony field, two in Phillipstown, one in New Harmony, and five in the Storms-Stokes area. There were two other tests in White County. Wabash County had two wildcats and eight field tests with the Maud pool accounting for three of these. In Marion County most of the attention was centered on work-over jobs in the Salem field, but Texas Co. announced 10 new locations, Magnolia had 1 new test, and Ohio had a start. There was a new test in the Tonti field. Remainder of the work was scattered.

An encouraging note was struck in the Irvington pool when Gulf Refining, 4 Buhl, W½ SE SW 23-1s-1w, swabbed 118 bbl. in 11 hours but was making only about 4 bbl. per hour after the flush was removed; the well had not been acidized and no water was reported. It would be the first Devonian well in Washington and the furthest south Devonian production in the state.

In Wabash County interest was heightened by S. C. Yingling, 1 Seiler, SW SW SW 26-1s-13w, which was flowing at the rate of 400 bbl. daily from the Hardinsburg sand at 2,110-33 ft. The Hardinsburg has not been productive in Wabash County heretofore. In the Lancaster area, Sections 1, 12, and 13-1n-13w, there was considerable activity due to recent completion of good wells.

NEW OPERATIONS

Clinton County

Livesay & Kerwin, 1 L. J. McAdams ..... NE SE SE 24-3n-2w
Drilling.

Wabash County

L. V. Garmer, 1 Westall.....NE NW SE 17-1n-13w
Rotary location.
Frank Tatum et al, 1 Ewalt ...NE SW SW 34-1s-13w
Set 10-in. surface pipe.

Wayne County

Robinson et al, 6 Joe Felix.....NE NW NW 35-2s-8e
Location.

White County

C. D. Neff, 1 Garner.....SE SE SE 36-4s-10e
Derrick up.
Eason Oil and Marshall, 1 Pearce NE SE NW 2-7s-10e
Location.

Franklin County

E. S. Adkins, 1 Old Ben Coal .... NE SE SE 14-7s-3e
Derrick up.

Gallatin County

Ralph Halbert, 1 Osborne .....SE SE NE 29-8s-10e
Set 8-in. surface pipe at 215 ft.

Montgomery County

Topf et al, 1 Breitenbach..... SE SE 13-9n-4w
Dry, Chattanooga 2,025 ft., Devonian 2,070 ft., T.D. 2,160 ft.
Southern et al, 1 Sawyer.....NE SE NE 15-8n-4w
Dry, T.D. 613 ft.

COMPLETIONS

Fayette County—Louden Field

Carter, 1 Fred Lancaster.....SE SW NW 10-8n-3e
Pumped 188 bbl. oil and 36 bbl. water, Cypress 1,511-44 ft., shot 15 qt., T.D. 1,602 ft.
Carter, 1 Kagay-Grames.....SW SW SW 13-8n-3e
Gas input well, Cypress 1,516-55 ft., T.D. 1,555 ft.
Carter, 1 Workman .....SW SE SW 13-8n-3e
Pumped 30 bbl., shot 5 qt., Cypress 1,500-16 ft.
Whisenant et al, 22 Lilly.....NW NW SE 16-8n-3e
Pumped 215 bbl., Paint Creek 1,555 ft., shot 30 qt., T.D. 1,584 ft.
Whisenant et al 24 Lilly .....NW SE 23-8n-3e
Pumped 200 bbl., shot 30 qt., Paint Creek 1,550-77 ft.
Carter, 23-4 Dragoo.....NW SE NE 23-8n-3e
Gas input well, Cypress 1,498-1,536 ft., T.D. 1,538 ft.
Carter, 1 Nancy Durbin .....NE SE SE 23-8n-3e
Pumped 240 bbl., shot 10 qt., Cypress 1,461-64 ft., T.D. 1,468 ft.
Carter, 3 Grames.....NE NW NW 24-8n-3e
Pumped 90 bbl., Cypress 1,524-32 ft.
Nash Redwine, 1 J. D. Rhodes....SE NE NE 3-7n-3e
Dry, Paint Creek 1,546-56 ft.
T. Rhynes, Rec., 1 Koberlin B....SW SE NW 4-7n-3e
Pumped 125 bbl., 35-qt. shot, Paint Creek 1,515-28 ft., T.D. 1,540 ft.
Carter, 24 Harvey Durbin.....NW SE NE 8-7n-3e
Pumped 306 bbl., 15 and 40-qt. shots, Cypress 1,468-1,500 ft., Paint Creek 1,545-64 ft.
Carter, 3 B. Kimbrell .....SW SW SW 8-7n-3e
Pumped 216 bbl., shot 10 and 40 qt., Cypress 1,419-1,502 ft., Paint Creek 1,529-47 ft., Bethel 1,556-65 ft.
Carter, 1 Bennie Shaw .....NW NW NE 17-7n-3e
Pumped 2 bbl. oil and 12 bbl. water, 40 and 70-qt. shot, Cypress 1,494-1,519 ft., Paint Creek 1,563-80 ft., Bethel 1,599-1,617 ft., plugged back 1,526 ft.

Fayette County—St. James Field

Texas, 7 E. G. McKee.....NE SW NW 6-6n-3e
Pumped 184 bbl., 20-qt. shot, Cypress 1,496 ft., T.D. 1,562 ft.
Texas, 9 E. McKee.....SE SE NW 6-6n-3e
Pumped 210 bbl., shot 10 qt., Cypress 1,540-50 ft.
Texas, 9 A. Yakel .....NE SE SW 6-6n-3e
Pumped 126 bbl., 7-qt. shot, Cypress 1,568-76 ft.
Ohio, 14 J. Swarm .....SW NE SE 36-6n-2e
Pumped 58 bbl., 8-qt. shot, Cypress 1,586-1,611 ft.
J. W. Sanders, 1 Miller.....NW SW NE 6-5n-3e
Dry, Bethel 1,789 ft., T.D. 1,795 ft.

Bond County

Roland, 1 Lindley ..... SE NE NW 29-6n-3w
Flowed 2,000 cu. ft. gas, sand 905-08 ft., T.D. 925 ft.
Dickerson & Leibernecht, 1 Stork SE NE NE 16-5n-2w
Dry, Devonian 2,435 ft., T.D. 2,565 ft.

Jasper County

Pure, 1 J. W. Honey A.....W½ SW NE 17-5n-10e
Flowed 746 bbl., Fredonia 2,788 ft., pay 2,780-82 ft., 2,792-98 ft., and 2,802-04 ft., T.D. 2,830 ft.
W. M. Krohn et al 1 Leggitt heirs SW SW NE 4-6n-14w
Dry, Fredonia 2,467 ft., porosity 2,468-73 ft. but no oil, T.D. 2,525 ft.

Richland County

Pure, 1 G. Stevens.....E½ SE SE 12-4n-9e
Flowed 264 bbl. through 1-in. choke, Fredonia 2,925 ft., pay 6 ft. in two streaks 2,931-39 ft., T.D. 2,965 ft.
Pure, 1 J. H. Wachtel A .....NW SE SW 6-4n-10e
Flowed 384 bbl., Fredonia pay 2,866-77 ft. (8 ft. in two streaks), T.D. 2,910 ft.

Wayne County

Pure, 1 Brissenden.....E½ NE SE 32-2n-8e
Flowed 1,051 bbl., Fredonia pay 3,014-25 ft., acid 5,000 gal., T.D. 3,080 ft.
Pure, 3 Hubbie A .....E½ SW NW 33-2n-8e
Pumped 284 bbl., Fredonia pay 3,021-24 ft., acid 5,000 gal., T.D. 3,090 ft.
Pure, 1 Horton Consolidated .... NW SE NE 5-1n-8e
Flowed 1,030 bbl., acid 5,000 gal., McClosky 3,018-28 ft., T.D. 3,105 ft.
Smokey Oil, 1 Hanna .....NE SW SE 34-1s-7e
Pumped 142 bbl., acid 3,000 gal., McClosky 3,228-90 ft.
Bell O. & G., 1 Flanders.....NE SE NW 3-2s-7e
Flowed 227 bbl., acid 5,000 gal., McClosky pay 3,210-15 ft. and 3,222-27 ft., T.D. 3,240 ft.
Weinert, 5 McPherson.....N½ NE NW 3-2s-7e
Flowed 960 bbl., 3,000 gal. acid, McClosky pays 3,200-09 ft., 3,217-23 ft., and 3,229-37 ft., T.D. 3,268 ft.
Rockhill, 6 Twist A .....NE SW SE 32-2s-7e
Pumped 40 bbl. oil and 20 bbl. water, acid 3,000 gal., McClosky 3,345-61 ft.
Dome O. & G., 1 Vaughn.....SE SE SW 26-2s-8e
Flowed 225 bbl., acid 4,000 gal., McClosky 3,393-3,400 ft., T.D. 3,413 ft.

Marion County—Salem Field

Texas, 20 W. Stroup.....SE NE NW 31-2n-2e
Flowed 590 bbl., Devonian pay 3,375-3,415 ft., acid 3,000 gal.
Texas, 12 A. Sweney..... SE SE SW 17-2n-2e
Flowed 198 bbl., acid 5,000 gal., Devonian pay 3,495-3,525 ft., T.D. 3,527 ft.
Texas, 29 T. Stroup.....N½ SW SE 30-2n-2e
Gas input well, Aux Vases 1,840-48 ft., T.D. 1,893 ft.
Magnolia, 110 J. H. Young .....NW SE SW 21-2n-2e
Flowed 283 bbl., acid 4,000 gal., pay 3,492-3,531 ft.
John Pugh, 5 Toulme .....NE SW SW 30-2n-2e
Pumped 30 bbl. oil and 18 bbl. water, shot 15 qt., Benoist 1,885-98 ft.
I. D. Lain, 13 Dempsey ..... NW NE SW 31-2n-2e
Flowed 700 bbl., acid 5,000 gal., Devonian pay 3,380-3,411 ft.
Texas, 72 City of Centralia .... SW SW NW 4-1n-2e
Gas input well, Aux Vases 1,864 ft., Benoist 1,805 ft., T.D. 1,886 ft.
Texas, 16 E. Farthing C ..... SW NE NW 4-1n-2e
Flowed 313 bbl., 20 qt., shot, Benoist 1,817-56 ft.
Texas, 15 J. O. Richardson ..... SE SE NW 5-1n-2e
Flowed 776 bbl., shot 20 qt., Devonian pay 3,383-3,425 ft.

Wabash County

H. W. Snowden, 1 Lutherland.. NE NE SE 7-1n-12w
Dry, no Biehl sand, T.D. 1,600 ft.
Burr Lambert, 2 Bucholz.....NW SW NE 9-2s-13w
Pumped 191 bbl., 30-qt. shot, Cypress sand 2,399-2,414 ft., T.D. 2,417 ft.
Sam Yingling, 1 E. Compton... SE SE SW 19-2s-13w
Pumped 279 bbl, 20-qt. shot, Biehl sand 1,699-1,713 ft., T.D. 1,715 ft.

Edwards County

Superior, 2 Works ..... NW SW SW 18-2s-11e
Flowed 540 bbl., acid 5,000 gal., McClosky 3,100-10 ft., T.D. 3,116 ft.
Noah & Morrison, 1 G. J. Works SE SE SE 13-2s-10e
Pumped 130 bbl., Waltersburg 2,373-81 ft.
Noah & Morrison, 1 G. Wick....N½ NE SW 24-2s-10e
Dry, T.D. 3,188 ft.

Monroe County

Hughes Pet. Co., 1 Fenaia.....NE NE SE 15-3s-11w
Dry, T.D. 1,100 ft.

Hamilton County

North American Oil, 1 Graves ...W½ NE NE 15-6s-6e
Dry, Rosiclaire 3,167 ft., T.D. 3,315 ft.

Gallatin County

Bert Fields, 8 Greene .....NW NE NE 20-9s-9e
Pumped 60 bbl. in 10 hours, 10-qt. shot, Waltersburg sand 1,763-85 ft.

Massac County

Marshall Drilling, 1 McGhee.....NE NE NE 3-16s-5e
Dry, Devonian 2,130 ft., small show oil 2,155-60 ft., T.D. 2,335 ft.

Wayne County

John Powell, 1 Moore.....NW NW SW 24-2s-9e
Dry, Fredonia 3,354 ft., T.D. 3,471 ft.

White County

Magnolia, 2 C. Pollard ..... SW SE SE 28-3s-9e
Pumped 173 bbl., 3,000 gal. acid, Rosiclair 3,360 ft., pay 3,351-60 ft., T.D. 3,407 ft.
(Continued on Page 74)

BRIDGEPORT

Announces

THE OPENING OF

GENERAL SALES OFFICES

SUITE 403
NATIONAL BANK OF TULSA BUILDING

TULSA, OKLAHOMA

We are now in our thirty-third year of service to the oil industry. Our policy and aim, as it has always been, is to keep abreast of the times and in tune with the requirements of the industry that we may provide our customers with good dependable products and useful services.

Today our facilities for accomplishing this purpose are more efficient than ever before. We distribute a complete line of Drilling and Production Equipment — the products of the foremost equipment manufacturers. With the exception of California and the extreme Eastern fields, our products are distributed in the whole of the United States.

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L. A. BABB, Vice-President
Director of Sales

Mr. Babb, Vice-President and Director of Sales, is now located in our General Sales Office at Tulsa with a force of experienced supply men who are at the service of equipment buyers in the principal operating centers of the oil country.

You will find our services useful, economical — our products dependable. You will find us equipped to serve you well in many localities, so that you can depend upon us for your needs wherever your work may take you. We solicit a share of your business.

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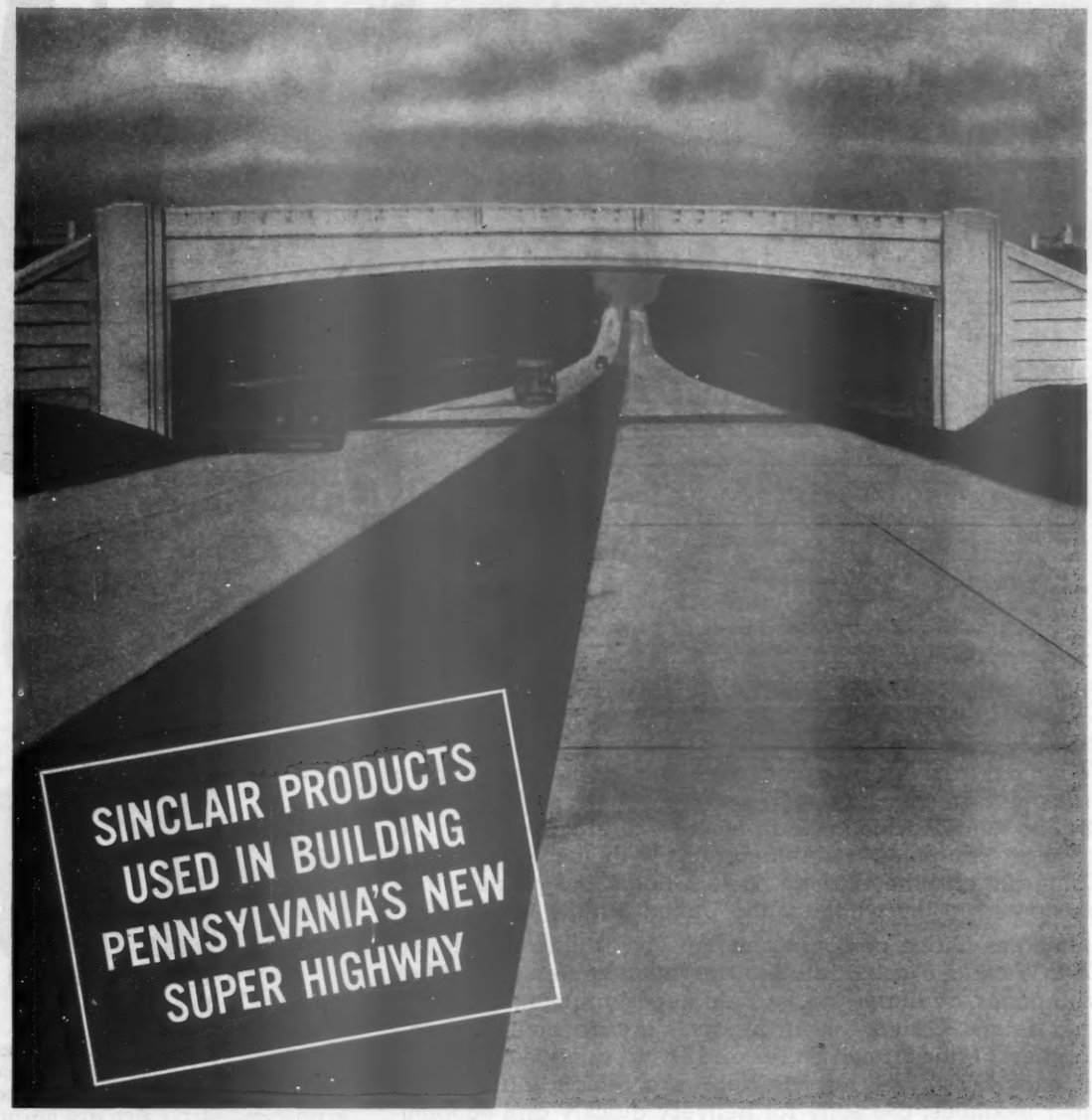

Eight different contractors building the new Pennsylvania Turnpike, a super highway between Pittsburgh and Harrisburg, selected Sinclair products for dependable service in their various pieces of equipment. Sinclair products were also used by contractors in building such famous projects as the Seminole Dam and the Austin Dam.

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Lincoln and Garfield Counties Pool Openers in Prospect

By
DAL DALRYMPLE

OKLAHOMA had a busy, though not particularly eventful week as 44 wells were completed, of which 19 were oil producers and 21 were dry.

Lincoln County registered another oil field as H. L. Wirrick and Kirk White completed their No. 1 Bell in SW SW NE 5-14-5, for an estimated 10 bbl. an hour. The Prue was found at 3,492 ft. and casing was set at 3,505 ft. On drilling plugs, the hole filled 1,600 ft. in 2 hours from a total depth of 3,532 ft. and was shut in for tankage and separator. The Checkerboard lime was found at 2,735 ft., and Oswego lime at 3,471 ft.

Another possible field opener is the Champlin Refining Co. test in Garfield County. This well, No. 1 Kunkel, E½ SE NW 23-23-6w, was drilled last month to the second Wilcox at 6,938 ft. It was plugged back to 6,190 ft. in the Mississippi lime and the casing perforated at 6,160-85 ft. On the first test it produced about 250,000 cu. ft. of gas per day, but after acidization flowed about 200 bbl. and was shut in for tankage. Casing pressure was 500 lb.

Cumberland Area

Pure Oil Co. now has nine active tests under way in the Cumberland area in Marshall and Bryan counties, with a location for No. 1 Thomas 202, NE SE NW 28-5s-7, a diagonal offset to No. 1 Thomas 102.

Pure, 1 Quintin Little 101, NE SW SE 28-5s-7, set pipe at 4,995 ft. in the upper Bromide sand, where shows of oil were reported and drilled to a total depth of 5,275 ft. in the McLish. On drilling plugs, water was encountered and the hole is being plugged back to 5,138 ft.

Pure, 1 Chrisman 104, NE NE NE 29-5s-7, is running 13⅜-in. casing at 713 ft. in black shale. No. 1 Stewart 103, SW SE NE 28-5s-7, is drilling in white sand at 5,039 ft. No. 1 Park College 200, SW SW SE 27-5s-7, is working stuck drill pipe at 4,060 ft. No. 2 Little 100, SW NW SE 27-5s-7, is drilling in dark gray shale at 750 ft. It topped the Pennsylvanian at 630 ft.

No. 1 Little 201, NE SE SE 28-5s-7, has completed pits and is waiting for rotary. No. 1 Metz 105, NE NW NW 28-5s-7, is building derrick, and No. 1 Thomas 102, SW NE NW 28-5s-7, set 7-in. casing at 4,975 ft. and is drilling at 5,162 ft.

East Okemah Pool

The new East Okemah pool of Okfuskee County had its second producer Thursday at the Phillips Petroleum, 1 McMahon, NE NE NW 11-11-10e. It had the Cromwell sand at 3,195-99 ft., set pipe at 3,194 ft. and after drilling plug bailed down and the fluid cleaned the hole. It was shut in for further testing.

Phillips at the same time announced work orders for No. 1 Replogle, SW SW SE 2-11-8e, a north offset to the C. A. Yoakam et al discovery well.

In Shawnee Pool

Ray Dunnett, 4 Rodgers, NW SE SW 31-11-4e, in the Shawnee pool of Pottawatomie County, was running 5½-in. casing, with the hole bottomed at 4,476 ft. in Earlsboro sand. Work was due to start this week at No. 3 Rodgers, SE NE SW 31-11-4e.

W. H. Riddle et al, 1 Knight, SW SE NW 31-11-4e, was drilling below 3,600 ft. in sandy shale.

Lincoln County got another wildcat test Thursday when Hobart Tanner and R. L. Kemp announced location for SE SE SE 28-17n-5e, between Cushing and the Agra pool. Location is on a seismograph high over which Mr. Kemp has been buying recently. Work is to start by August 15.

Stephens Gets Pair

South of the old Cruce area in Stephens County, Burkhart and Campbell are starting No. 1 Luster, SE SW SE 9-1s-5w, on a recently assembled block. Operators are playing a trend between the Crude and Velma fields.

Between the old Palacine and Velma area, A. Minnick is starting No. 1 G. R. Damron, NW NW SW 25-2s-6w, along a trend.

Lease Sales

Gulf Oil Co. was awarded leases on two tracts of state-owned land near Colbert in southern Bryan County by the School Land Commission on high bids.

The company bid $537 for 70 acres, being the NW SE SE and SW SE and E½ SE SW 8-8s-8e, and $543 for 76.46 acres in 17-8s-8e, described as the E½ E½ NW (less 2.54 acres for railway right-of-way) and W½ NW NE and NE NW NE and all of W½ NE NE and all of SE NW NE and all of N½ SW NE lying north and west of the Katy railroad tracks.

C. F. Finefield was awarded lease on Lots 1 and 2, and S½ NE 4-17-18e (totaling 164.26 acres) in Wagoner County, on bid of $1 per acre plus a drilling contract.

Charles C. Brewer, of Oklahoma City, was awarded three tracts in Rogers County, he bid $1 and drilling contract on S½ NE SE 28-24-16e, and $1 per acre on NW NW and S½ N½ NW and northwest 10 acres of Lot 1 in 34-24-16e.

Estimated Daily Production

Estimated daily production in Oklahoma for the week ended July 27, and for the preceding week, was as follows:

	Barrels	
	July 27	July 20
Allen	5,250	5,250
Billings	6,000	6,050
Burbank	7,025	7,100
South Burbank	8,050	8,225
Balance Osage	17,025	17,150
Blackwell district	3,400	3,500
Bristow-Slick	5,800	5,750
Chandler	1,025	1,000
Crescent	2,150	2,300
Cromwell	2,850	2,900
Cushing-Shamrock	9,100	9,150
Duncan	3,625	3,650
Edmond	4,025	4,100
Fish	3,175	3,150
Fitts	16,100	16,100
Jesse	2,100	2,100
Graham-Fox	2,400	2,450
Gray	775	750
Healdton	8,700	8,750
Hewitt	3,800	3,800
Keokuk	3,100	3,150
Konawa	1,050	1,100
Lucien	7,900	7,950
Moore	1,800	1,800
Northeastern counties	17,100	17,000
Oklahoma City	98,300	106,150
Olympic	1,950	2,000
Ramsey	3,775	3,800
Sasakwa	1,450	1,450
Sholem-Alechem	2,700	2,750
Seminole district:		
Bowlegs	6,650	6,700
Carr City	2,325	2,350
Dora	2,250	2,350
Earlsboro	4,150	4,150
East Earlsboro	1,775	1,850
South Earlsboro	525	550
Little River	6,600	6,725
East Little River	650	700
Maud	550	550
Mission	1,225	1,300
Seminole	7,000	7,125
East Seminole	1,175	1,300
Searight	2,025	2,050
Total Seminole	36,900	37,700
St. Louis-Pearson	25,450	26,500
Tatums-Tussy	2,000	1,900
Tonkawa-Garber-Thomas	3,675	3,800
Wewoka	1,450	1,500
Yale-Jennings	3,125	3,250
Other pools	79,325	79,500
Total Oklahoma	403,625	414,525

OKLAHOMA COMPLETIONS

Atoka County

Scrivner, 1 Plattner ..... NW NW NE 36-3s-13
Dry, T.D. 1,527 ft.

Caddo County

Sinclair Prairie, 1 German ..... SW NW NW 1-6-13w
Dry, Wilcox 9,179 ft., sand 10,074 ft., Arbuckle 10,922 ft., T.D. 11,026 ft., P.B. to 2,450 ft.

Carter County

Daube, 21 W. & D. ..... NE SE SE 14-4s-3w
Dry, O.T.D. 1,164 ft., T.D. 1,492 ft. in sd., wtr.

Cleveland County

C. E. Hamilton, 1 Meyers ..... SW SW NE 22-9-2w
Dry, Hunton 6,895 ft., Viola 7,221 ft., sandy dolomite 7,580 ft., first Wilcox 7,599 ft., T.D. 7,609 ft.

Cotton County

Davis, 4 Anderson ..... SE NE SW 23-1s-10w
130,000 cu. ft. gas, T.D. 2,172 ft.

Creek County

Marion, 1 Keenan ..... SW NE 11-17-9
Dry, O.T.D. 1,928 ft., S.O. in Prue 1,963 ft., T.D. 2,033 ft., P.B. 1,990 ft.
Wolfe, 2 Abraham ..... NE NE 24-17-9
Pumped 25 bbl. oil, Bartlesville 2,289 ft.
Biglin, 1 Reed ..... CNL SW SW 29-18-10
Dry, Bartlesville 2,258-2,314 ft., T.D.
Dempsey, 1 Marrs ..... NE NW SE 29-18-8
Pumped 50 bbl. oil, Prue 2,445-55 ft.

Garvin County

Roy Starr, 1 Shi ..... NW NE NE 8-4-3
Dry, S.S.O. 2,700-05 ft., T.D. 3,115 ft.

Hughes County

Clark-Cowden, 1 Barnhart ..... SW NW SW 32-7-8
Flow 300 bbl., sdy Wapancka, T.D. 3,158 ft.

Jackson County

Gulf, 6 Barrett ..... NW SW SW 10-1-20w
50 bbl., T.D. 1,526 ft.
Burnham, 1 Guyrman ..... NW NW SW 14-1-20w
20 bbl., O.T.D. 1,452 ft., T.D. 1,519 ft.

Kiowa County

Tice Prod., 1 Fowler ..... SE NW 10-7-18w
Est. 4,000,000 cu. ft. gas 785 ft., T.D. 1,681 ft., abandoned.

Lincoln County

Allied Oil, 1 Smulin ..... NE SE NW 2-13-6
Dry, Viola 4,208 ft., Dense 4,236 ft., Wilcox 4,260-69 ft.
Wirick & White, 1 Bell ..... SW SW NE 5-14-5
Est. 10 bbl. per hour, Prue sand 3,505-32 ft., T.D.

Muskogee County

Pine, 1 Cable ..... SW SW NE 16-14-17
5 bbl., T.D. 1,990 ft.

Okmulgee County

Rebold, 1-A Bigson ..... NE NW SE 12-14-12
6 bbl., T.D. 1,369 ft.
Callahan, 1 Mullins ..... NE SW SW 20-14-15
Dry, T.D. 1,352 ft.

Osage County

Stevenson, 2 Osage ..... NW NW NW 34-28-10
Dry, T.D. 1,831 ft.
Mid-Continent, 1 Osage ..... NW NW NE 18-24-5
Dry, T.D. 3,665 ft.

Payne County

Portable, 1 Bain ..... SE SW NW 24-17-4
Dry, S.S.O. in Hunton 4,500 ft., Viola 6,949 ft., T.D. 4,667 ft.
Burke-Greis, 1 Olson ..... W½ E½ NW 26-19-5
Dry, T.D. 3,737 ft.

Pawnee County

Watchorn, 18 Miller ..... CSL N½ SW 33-23-3
Flow 300 bbl., Layton 2,668-95 ft., T.D.

Pontotoc County

Pine, 5 Randall ..... NE NW NW 35-5-4
Pumped 72 bbl. oil and 10 bbl. water, acid, Viola 2,395 ft., T.D. 2,535 ft.
Lloyd, 1 Auten ..... SE NE SW 36-5-6
Dry, S.S.O. in sand 1,720 ft., T.D. 1,734 ft.
Cornell, 1-A Standridge ..... N½ NW SE 25-5-4
132 bbl., T.D. 2,602 ft.
Ramsey Pet., 1 McFarland ..... NE NE SE 2-4-7
1,000,000 cu. ft. gas, Gilcrease 1,959 ft., T.D. 2,603 ft.

Pottawatomie County

Winvon, 1 Fiddler ..... SE SE 4-5-5
Dry, Hunton 2,558 ft., T.D. 2,795 ft., hole full of oil and water.
Denver Prod., 4 Houck ..... NE SW NW 1-6-4
Pumped 120 bbl. oil and 1,680 bbl. water, acid, dolomite 4,090 ft.
Moore, 1-A West ..... NW SE NW 26-6-4
Dry, Senora lime 2,801 ft., stain in shale 2,970 ft., T.D. 2,980 ft.
Vise, 3 Richardson ..... SW NE SW 16-7-4
Flow 65 bbl., shot, Earlsboro 3,488 ft., T.D. 3,516 ft.

Pushmataha County

Gulf, 6 Barrett ..... NW SW SW 10-1-20
Flowed 75 bbl., Pont. 1,020 ft., T.D. 1,526 ft.

Tulsa County

Moore, 2-A Griffith ..... NW SW SW 13-17-12
Dry, T.D. 1,900 ft.
Bird Creek, 2-A Eagan ..... SW SW NW 31-22-13
500,000 cu. ft. gas, T.D. 1,452 ft.

Seminole County

Hewitt, 4 Adams ..... SE SW SE 31-7s-6
Pumped 20 bbl., sand 545-55 ft., T.D.
Winona, 3 Barkers ..... NW NE SE 18-7-8
Swabbed 60 bbl. of oil and 120 bbl. water, Viola 4,074 ft., Wilcox 4,194-98 ft., T.D.
Fleet-Osborn, 1 Barkus ..... NW NW NE 10-5-5
Dry, T.D. 2,695 ft.
Cities Service, 2 Fish ..... SE SW NE 19-7-8
Recompleted for 2 bbl. oil at 3,140 ft., T.D., O.T.D. 3,120 ft.
Davis, 1 Keys ..... NE NE SE 4-11-8
Dry, T.D. 4,243 ft.
Davis et al, 1 Thlocco ..... NW SW NW 30-7-7

Flowed 40 bbl. naturally, est. 77 bbl., shot, T.D. 2,274 ft.
Olsen, 2 Brister ..... SE SW NE 29-7-5
64 bbl., T.D. 4,225 ft.

Wagoner County

Brandenburg, 12 Cambrian ..... SW NE SW 35-18-15
Dry, T.D. 1,030 ft.
Martin O. & G., 7 Walcott ..... SE NW NW 36-18-15
5 bbl., T.D. 1,025 ft.

NORTHERN OKLAHOMA WILDCATS

Garfield County

Champlin Ref., 1 Kunkel E½ SE NW 23-23-6w. Layton 5,048 ft., Mississippi 6,070 ft., T.D. 6,930 ft., P.B. 6,190 ft., flowed by heads, to acidize.

Kay County

Armor & Wilson, 1 Delman, NE NW SW 28-27-1w. Drlg. 300 ft.
Malarnee Oil, 1 Harris, SW NE 14-25-1. Mississippi 4,050 ft., chat with S.O. 4,063-4,105 ft., water 4,433-40 ft., T.D., P.B. 3,700 ft., S. 25 B.O. and 50 B.W., testing.
Earl Williams, 1 Trueblood, SE SE 25-25-1w. W.O.C. 110 ft.

Kingfisher County

Phillips Pet., 1 Grape, NW SE 30-18-5w. Layton 5,600 ft., O.S.W. 4,146 ft., Mississippi 6,670 ft., Viola 7,425 ft., Wilcox 7,585 ft., second Wilcox 7,721 ft., drlg. 7,747 ft.

Kiowa County

Tice Prod., 1 Fowler, SE SE NW 10-7-18w. T.D. 1,681 ft., D.&A.

Lincoln County

Vierson O. & G., 1 Bell, SW SW NE 5-14-5. W.O.C. 3,532 ft.
H. F. Wilcox, 1 Murphy, NE SE SW 7-14-6. Drlg. 310 ft.

Muskogee County

Garrett, 1 Reinhart, SE cor. 15-13-17. Drlg. 950 ft.

Noble County

Helmerich & Payne, 1 Fireshaker, SE SE NE 11-24-3. Simpson 3,960 ft., Wilcox 3,965 ft., sand and S.S.O. 3,983 ft., Arbuckle 4,158-84 ft., T.D., to acidize.

Okfuskee County

Burke-Greis, 1 Dew, NE NE NE 9-12-9. Prue 1,810 ft., Hunton 3,888 ft., pay 3,906 ft., flowed 72 B.O.P.D., T.D. 3,945 ft., incr. gas 3,926 ft.
Reese Drlg., 1 Berryman, NW SW SW 36-11-8. S.O. in Cromwell 3,462 ft., flowed 72 B.O.P.D., building tanks.
Texas, 1 Cowan, SW cor. 5-11-10. Hunton 3,646 ft., first Wilcox 3,879 ft., second Wilcox 3,903 ft., P.B. 3,730 ft., flowed and died, 1,800,000 cu. ft. gas.

Oklahoma County

Continental, 1 Renund, SE SE NE 24-14-4w. Drlg. 6,202 ft.

Okmulgee County

Sheridan Oil, 1 Hayden, NE NW SW 4-15-12. Drlg. 950 ft.

Osage County

Norbla et al, 1 Osage, NE NE NW 25-22-9. Arbuckle 2,423-49 ft., T.D., 1,000 ft. oil in hole, to acidize.
Olson et al, 1 Osage, CSL S½ NE 26-26-4. Drlg. 3,042 ft.

Pawnee County

Benedum-Trees, 1 State, SW NW NW 13-21-6. Drlg. 2,421 ft.

Payne County

Allen et al, 1 Freeman, SW SW SE 24-19-5. Drlg. 2,745 ft.
Elson et al, 1 Murphy, SE SE NE 29-19-2. Mississippi 4,395 ft., Hunton 4,550 ft., T.D. 4,803 ft., est. flowed 30 B.O.P.H.
H. & H. Oil, 1 Linsenmeyer, SE SE SW 3-18-4. S.D. 3,035 ft., water.
Stonehill Drlg., 1 Vann, NW SE NW 30-18-2. Drlg. 1,491 ft.

Pontotoc County

Crescent Oil, 2 Thompson, NE NW SW 29-3-4. Drlg. 1,185 ft.
Garrett, 1 Williams, NE cor. 28-2-4. S.D. 570 ft.
Hall et al, 1 Walker, SE SW SW 4-5-5. Drlg. 235 ft.
Kerlyn Oil, 1 Chism, NW SE SE 24-5-6. S.O. 1,940-70 ft., T.D. 2,173 ft., P.B. 1,972 ft., S.I.
Star et al, 1 State-Bayless, SE SE NW 32-5-4. Drlg. 1,120 ft.

Pottawatomie County

J. F. Smith, 1 Brown, NE SE SE 6-7-4. Drlg. 3,510 ft.

Washita County

Continental, 1 School Land, NE 16-8-16w. Drlg. granite wash 7,906 ft.

SOUTHERN OKLAHOMA WILDCATS

Atoka County

Thompson Bros., 1 Richardson, NE SE SW 10-3s-9. Hunton 1,230 ft., S.O. 1,259 ft., Wilcox sand 2,365 ft., T.D. 2,378 ft.

Marshall County

May Oil, 1 Sacrea, SW NE SW 17-5s-5. Drlg. 1,745 ft.

Tillman County

Cline et al, 1 Staley, SE SE NW 10-2s-19w. Drlg. 5,380 ft.
Kadane Bros., 1 Andrews, NW cor. 35-2s-19w. W.O.C. 5,550 ft.

FIRST REPORTS

Bryan County

Pure, 1 Metz ..... NE NW NW 28-5s-7

(Continued on Page 66)

Corrects WIRE LINE SPOOLING TROUBLES

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Deep Test in Rosecrans May Open New Productive Zone

By
L. P. STOCKMAN

LOS ANGELES, Calif., July 29.—Crude-oil production in California has been averaging about 2,000 bbl. per day below similar data last month, and if this condition prevails for another few days production for the month of July should approximate 615,000 bbl. daily as actual production during June was 617,464 bbl. per day. This is far above the allowable which has been set at 580,000 bbl. per day for several months. The excess above the allotment can be traced primarily to Kettleman North Dome, Wilmington, and a number of other fields with smaller overages. Current daily production of leading California fields for the past week follows:

	Barrels
Wilmington	84,750
Kettleman North Dome	47,750
Long Beach	42,475
Midway-Sunset	40,100
Ventura Avenue	34,650
Coalinga	29,185
Santa Fe Springs	25,900
Huntington Beach	23,950
Santa Maria Valley	19,350
Montebello	19,050

LOS ANGELES BASIN

Rosecrans Field

A new productive zone for the Athens section of the Rosecrans field in Los Angeles Basin and one that may extend north and west rather than southward is expected to be proved up within the next few days as Thorley Oil Co. is testing No. 12-1 Athens for production at the present time. This well has cored 230 ft. of excellent-looking oil sand and appears almost definitely assured of commercial production although gas pressure and amount of gas present is still conjectural. On a formation test made several days ago the well indicated that it would be good for about 1,000 bbl. per day of very clean 30.1-gravity oil but failed to produce any considerable quantity of gas. Since that test the company has drilled ahead from 8,010 ft. to 8,080 ft. and this additional 70 ft. of hole may result in a larger gas production than has been expected. This well will greatly stimulate drilling in the area and has already resulted in a general scramble for leases with the result that present quotations call for a cash bonus of $1,000 per acre and a royalty averaging from 16⅔ per cent to 18½ per cent, depending upon location of the lease with respect to the Thorley well. There is very little acreage available around the well because much of it has been subdivided into 50-ft. lots. A few community leases have been formed but for the most part leases have been made on town lots.

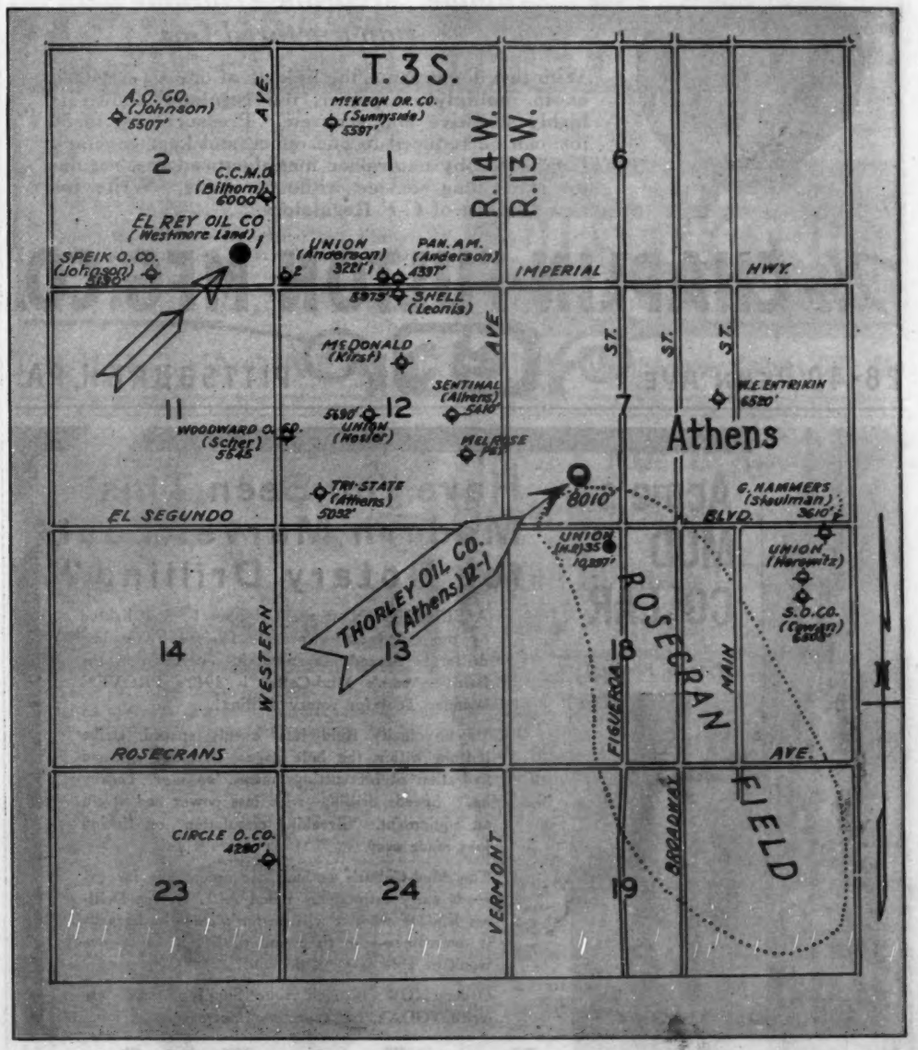
The Athens section of the Rosecrans field is the hottest area in California at present and this condition appears merited because there are no other fields in the ascendency where operators can secure favorable acreage. The Thorley well, due for early completion, may determine the status of this area within 48 hours. It is interesting to note that the Athens section of the Rosecrans field, which is the northernmost part of the field, has remained relatively inactive for a number of years, but revived again a few months ago when operators began securing large flowing wells in the southern part of the field and even south of the original southern limits. The Rosecrans field is divided into three sections: the Athens or northern part; the Rosecrans section and the Rosecrans extension. Athens and Rosecrans sections are normal anticlines complicated by complex faulting and the Rosecrans extension, which is the most southerly part of the structure, is an accumulation against a dominating fault. This fault, against which oil and gas have accumulated, has a northwest-to-southeast trend and may exert some effect on the El Rey area although this is purely conjectural at present.

Possible Extent of Field

It has been fairly well determined that if there is a field of first magnitude in the Athens section of the Rosecrans field it must lie north of the Thorley well now being tested out. This well has penetrated the O'Dea zone that has been found highly productive in the southern section of the field and if it performs up to expectations it should prove good for about 2,500 bbl. per day. Union, 35 Howard Park definitely indicates that the productive area must be located north of the Thorley well because it was carried down below 10,000 ft. and failed to find a zone that was cored in Thorley, 12-1 Athens. Surface indications in this area are rather confusing and thus operators are confronted with the problem of which way to lease. One large company is working on the assumption that there are at least two structures in the Athens area and there appears sound reasoning for this assumption. On the tangible side we find one well, El Rey, 1 Westmore Land, in the SE SE 2-3-13, pumping about 150 bbl. daily and Thorley, 12-1 Athens, in the O'Dea sand at 8,080 ft. These two wells are about 1½ miles apart. This may indicate the existence of one large field, but conditions in both wells appear dissimilar which tends to indicate the existence of two separate accumulations. Land is being leased on the theory that the El Rey area will extend north to northwestward to Manchester street a distance of about 1½ miles. Another company is leasing southward of the El Rey well as far as the Panama Acres area which is over 1 mile to the south. Much of this intervening acreage has been subdivided and therefore future drilling depends upon the location of the productive acreage. One thing appears rather certain and that is there will be little acreage developed as the entire area consists of very small holdings, with only a few 40-acre tracts.

Dominguez Field

Union Oil Co. completed two more wells in the extreme western end of the Dominguez field this week and thus indicated that this company will benefit more than any other by the extension work undertaken last year by R. E. Havenstrite, who completed three wells on the Larronde lease in the western end



Thorley Oil Co. has cored 71 ft. of good-looking oil sand in No. 12-1 Athens at the north end of the Rosecrans field in Los Angeles Basin. A few weeks ago El Rey Oil Co. completed a small pumping well to the northwest. These two wells may be located on the same structure and will lead to aggressive drilling if the former shows good production

of the structure. Recent developments indicate the probability that the western limits of production are not far removed from present development by Union Oil Co., although this remains to be seen. Gus Pongratz proved last year that the productive limits of the Dominguez field do not extend to Main Street and so the outer limits of the field are between this well and present development. Surf Associates, organized last year to develop several locations in the state tidelands at Huntington Beach, completed its first tideland well this week flowing 405 bbl. of relatively clean 23.4-gravity oil per day from a whipstocked depth of 4,993 ft.

Montebello and Wilmington

The Montebello field, which is headed for a lower level but which will hold up fairly well for another 60 days due to alleviation of conditions incident to the expanded gas cap, failed to yield a new well this week but did contribute two recompletions as a result of deepening operations. Development work in the Wilmington field of Los Angeles Basin resulted in the completion of three Ranger zone wells that showed normal initials. The virgin Ford zone which underlies the Ranger and Terminal zones that have been developed during the past 2 years with outstanding success will undoubtedly be held back for an indefinite period of time as a recent check indicates that the intention of holding back development of the Ford zone is unanimous. As a consequence no wells will be drilled down to the Ford zone during the current year in the Long Beach Harbor section of the Wilmington field. The Wilmington field is divided into four segments by faulting which has had the effect of making the field four separate units, the accumulation of oil and gas in which are separate and distinct entities. This favorable condition has proved advantageous because the town-lot section in the west end of the field has been developed to the maximum but this has had no effect on the production of the other segments. The Ford zone in the town-lot area proved a distinct disappointment due to low saturation and lack of gas, but this horizon in the Long Beach Harbor section of the field has a favorable saturation and plenty of gas based on the limited data available as provided by one well.

LOS ANGELES BASIN COMPLETIONS

Dominguez Field

Union, 3 Austin 32-3s-13w
Flow 960 bbl. 31.5-gravity; 1.8 per cent cut. Completed in eighth Callender zone. T.D. 7,540 ft.
Union, 77 Callender 29-3s-13w
Flow 550 bbl. 31.6-gravity; clean. Completed in eighth Callender zone. T.D. 7,450 ft.

Huntington Beach Field

Huntington Signal, 1 Genor 35-5s-11w
Pumped 40 bbl. 21.1-gravity, clean. T.D. 3,683 ft.; plugged back to 3,645 ft.
Standard, 39 Bolsa 34-5s-11w
Flow 618 bbl. 26.7-gravity; 6.5 per cent cut, 46/64-in. bean. T.D. 3,630 ft. This well was deepened from upper zone. Completed with 790 ft. gravel-packed liner. Formerly produced from 2,894 ft.
Surf Associates, 1 State 10-6s-11w
Flow 405 bbl. 23.4-gravity, 4 per cent cut; bottomed beneath the Pacific Ocean from the uplands by directional drilling. T.D. 4,993 ft.

Montebello Field

Pongratz, 2 Newmark 2-2s-12w
Flow 355 bbl., 37.1-gravity; cut 0.2 per cent. Deepened from 7,653 ft. to 8-3 zone at 7,787 ft.
Traders, 1 Montebello 2-2s-12w
Flow 55 bbl., 34.9-gravity, 2 per cent cut. Deepened from Masser zone at 6,438 ft. to 8-3 zone at 7,786 ft.

Wilmington Field

Continental Corp., 10 L.A.C.F.C. 2-5s-13w
Flow 504 bbl., 16.3-gravity, 1 per cent cut, 34/64-in. bean; 417 ft. gravel-packed liner. Completed in Ranger zone at 3,073 ft.
Dumm Bros., 7 Harbor 32-4s-13w
Flow 525 bbl., 17.1-gravity, 4 per cent cut, open line. T.D. 3,696 ft., Ranger zone.
Union Pacific Railroad, 144 fee 3-5s-13w
Flow 317 bbl., 20.1-gravity, clean; completed in Ranger zone at 2,676 ft.

LOS ANGELES BASIN DRILLING WELLS

Dominguez Area

Wood-Mellon, 1 West 31-3s-13w
This outpost running about 200 ft. lower than Dominguez wells, but appears to be correlating closely. May bear watching. Now down 6,650 ft.

Rosecrans Area

Inca, 1 Union 18-3s-13w
This outpost has reached the critical depth and its fate should be known within another week. Now down 7,890 ft.

San Fernando Valley

Casa Grande, 1 Lopez 1-2n-15w
T.D. 3,785 ft.; 4¾-in. cemented at 3,075 ft. Gun-perforating 4¾-in. at intervals 2,900-2,250 ft.
Continental, 2 Howell 35-3n-16w
This is second well drilled by this company on Howell lease. First well abandoned as duster. This well about 1 mile removed from first failure.
Newhall-Potrero, 1 Ferguson 26-5n-17w
T.D. 3,910; coring for oil sand.

Whittier-La Habra Heights

Union, 12 Sansinena 31-2s-10w
T.D. 5,620 ft., drilling. First hole was abandoned when fault encountered. This hole is being drilled after whipstocked. Next few hundred feet will determine status. Outlook unfavorable.
Security Land & Water, 1 Security 9-3s-10w
T.D. 3,296 ft. Companion well with Union, 12 Sansinena to form triangle in district.

SAN JOAQUIN VALLEY

No. 1 Riggs of Superior Oil Co., the most important drilling project in the San Joaquin Basin, has taken on an unfavorable outlook at 11,220 ft. by failure to reach the Rio Bravo and Vedder zones in the Rio Bravo field. Top of the first zone should have been found, above this depth and the absence of the pay tends to indicate the report that the well is running 600 ft. lower structurally than anticipated has some basis in fact. Superior is not putting out any information on this important outpost and its reluctance to release any formation data is well taken. The reason for withholding information on this well is due to a new development and one that appears to be gaining ground. Reference is made to the so-called top leasing which means that an outside operator steps into play and takes a second lease on top of another's original lease. In case the first operator fails to conform with lease stipulations or requirements the original lease is canceled and the second or top lease becomes valid. Two top leases were taken on two leases of Superior Oil Co. in the Rio Bravo field a few weeks ago at a time when it looked doubtful whether the company could reach the anticipated depth in No. 1 Riggs to secure needed geological and structural conditions. Ordinarily an operator is able to secure a short extension on a lease in a case like this but with top leases in effect no extension could be made. These two leases expired at midnight July 18 and with top leases in effect Superior Oil Co. began grading and making preliminary preparations to start work and thus validated the two leases. These two leases are located farther out on the structure than No. 1 Riggs and consequently would be abandoned if No. 1 Riggs proved to be a

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duster or would be retained if this well resulted in large production at the conventional depth. No. 1 Riggs looks at this present moment like it will either prove to be a dud or that if production is secured it will be too deep to permit other leases to the north to be completed. It is believed quite probable that Superior will retain possession of the Bohna and Devine leases until No. 1 Riggs is completed or abandoned. The depth of No. 1 Riggs indicates that the nose of the Rio Bravo structure is plunging downward at a rapid rate. This is a source of satisfaction to a number of companies and operators running geophysical surveys as the seismograph definitely showed the structure at this point to be plunging fast. On the other hand it is a source of regret to many operators, including General Petroleum Corp., Tide Water Associated Oil Co., Barnsdall Oil Co., Union Oil Co., Superior Oil Co., Ohio Oil Co., which have leases north and west of No. 1 Riggs of Superior Oil Co. Western Gulf Oil Co. may possibly get one or two locations on its lease east of the Riggs property, but this remains to be seen.

SAN JOAQUIN VALLEY COMPLETIONS

Greeley Field

Standard, 11-22 Kern County Land 18-29s-26e
Flow 3,060 bbl., 35.6-gravity, clean, 32/64-in. bean, 2,807,000 cu. ft. of gas. Top Rio Bravo zone 11,335 ft., base of grit 11,352 ft., top of Vedder 11,380 ft. T.D. 11,510 ft.

Kettleman North Dome

Kenda, 58-18-Q 18-22s-18e
Located in Kings County, flow 1,834 bbl. oil, 38.1-gravity, clean, 42/64-in. bean, 990,000 cu. ft. of gas. Top of Brown shale 5,420 ft. Completed in Temblor at 7,590 ft.

Kenda, 27-26-Q 26-22s-18e
Located in Kings County. Flow 1,350 bbl. 37.3-gravity, 1.7 per cent cut, 3,000,000 cu. ft. of gas, 41/64-in. bean. Top Brown shale 5,178 ft., top Temblor 6,488 ft. T.D. 7,852 ft.

Kenda, 58-26-Q 26-22s-18e
Located in Kings County. Flow 1,902 bbl., 32.1-gravity, 3.5 per cent cut, 1,132,000 cu. ft. gas, 50/64-in. bean. Top Brown shale 5,585 ft., top Temblor 6,632 ft. T.D. 8,485 ft.

Tupman Field

Richfield, 78-28-B Kern County Land 28-30s-25e
Flow 1,515 bbl. 33.4-gravity oil, 4 per cent cut, 890,000 cu. ft. gas. Completed in Stevens sand at 9,360 ft.

Rio Bravo Field

Superior, 2 Roe 27-28s-25e
Flow 1,558 bbl. 39.4-gravity oil, clean, 1,750,000 cu. ft. of gas. Top Rio Bravo sand 11,139 ft. T.D. 11,375 ft.

Ten Section Field

Shell, 61-30-A Kern County Land 30-30s-26e
Flow 731 bbl. 35.2-gravity oil, 16.3 per cent cut, 620,000 cu. ft. of gas. Flow open line and completed in Stevens sand at T.D. 8,220 ft. Located in north side of field.

Delano Gas Field

Trico O. & G., 5 Miller & Lux 3-25s-23e
Flow 3,600,000 cu. ft. of gas through ¾-in. bean. Deepened through liner from 2,467 ft. T.D. 2,495 ft.

Rio Vista Gas Field

Bishop, 1 Willmar 21-4n-3e
Dry. Ran liner and tubing to 4,145 ft. and tested wet. T.D. 4,145 ft.

SAN JOAQUIN VALLEY WILDCATS

Devils Den

Seaboard, 66-17 Beer 17-26s-19e
Top Temblor 470 ft., objective, Point of Rocks sand in upper Eocene expected around 8,500 ft. Drilling ahead at 2,698 ft.

Shale Hills

Texas, 1 Theta 12-28s-19e
Formation test 4,550-4,697 ft. recovered 1 stand mud and 7 stands salt water. Drilling ahead at 5,060 ft. in hard shale with 60° to 80° dips. May be early abandoned.

Rio Bravo Field Outposts

Superior, 1 Riggs 21-28s-25e
Extreme northwest outpost in Rio Bravo field now drilling ahead at 11,240 ft. Reported running 800 ft. lower structurally and will have great effect on acreage and leases.

Superior, 1 Bohna 20-28s-25e
Grading to validate lease and waiting outcome of work on No. 1 Riggs. Has top lease by other operator.

Superior, 1 Devine 21-28s-25e
Grading to validate lease and waiting outcome of work on No. 1 Riggs. Has top lease by other operator.

Greeley Field Outpost

Superior, 1 Brandt 28-29s-26e
Recovered fish that had been holding up drilling at 11,697 ft. This well, now down below 11,750 ft., is running 700 ft. lower structurally than wells within Greeley field. Outlook for southern extension of Greeley field by this well is doubtful.

Tejon Ranch Area

Richfield, 1 Ranch 2-10n-19w
Cemented whipstock at 6,557 ft. to redrill.

Wheeler Ridge Area

Richfield, 2 Kern County Land 28-11n-20w
Drilling ahead in hard shale at 4,990 ft. This will be deep test.

Cantua Area

Logan, 44 Yearout, Fresno County 26-16s-14e
Drilling ahead in gray shale at 8,960 ft. Will abandon at 9,000 ft. if no oil sand found above this point.

Jacalitos

Continental, 1 Joint Test 4-32s-16e
Located in Fresno County. Drilling ahead at 6,790 ft. Expect to go to about 9,000 ft.

COASTAL DISTRICT

Drilling operations in the coastal district, comprising Ventura, Santa Barbara, Monterey, and San Luis Obispo counties, resulted in the completion of only two wells producing crude oil and one wildcat abandoned. The hot spot in the Santa Maria Valley resulting from the starting of a well on the Lake View School property by Petrol Corp. cooled off this week when that company sold the site in fee to another operator. The purchaser found it necessary to buy this property because it would be obliged to drill four offsets at a cost of about $40,000 each. Petrol bought this property in fee several months ago for $15,000 and started a well a week or 10 days ago. This property had a nuisance value and the purchaser from Petrol Corp. found it cheaper to buy the property in fee and suspend work than to proceed with four offsets on adjacent property.

COASTAL DISTRICT COMPLETIONS

Ventura Avenue Field

British-American, 10 Hartman 21-3n-23w
Flow 424 bbl. 30.6-gravity oil, 7.5 per cent cut, 288,000 cu. ft. of gas, 22/64-in. bean. T.D. 9,811 ft.

San Miguelito Field

Continental, 17 Grubb 24-3n-24w
Flow 1,540 bbl. 30.5-gravity oil, clean, 775,000 cu. ft. gas. T.D. 6,845 ft.; 7-in. csg. cmtd. 5,635 ft.

Gaviota Area

Republic, 1 Hollister 36-5n-33w
Dry. Located in Santa Barbara County. Formation tester 3,512-30 ft. recovered all salt water. Formation hard shale with steep dips. T.D. 3,630 ft.

COASTAL DISTRICT WILDCATS

Betteravia—Santa Barbara County

Union, 2 Pezzoni 33-10n-35w
Drilling at 4,681 ft. This is second wildcat on this

(Continued on Page 66)

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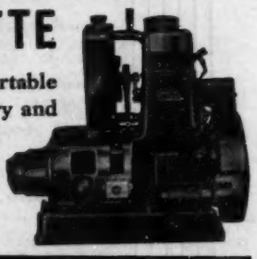

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Old Agua Dulce Test Revived By Stratton Oil Discovery

By F. L. SINGLETON

CORPUS CHRISTI, Tex., July 29.—Prospects for another new field in Nueces County were seen for the lower Gulf Coast and Southwest Texas district as Fred W. Shield prepared to test oil and gas showings found in his No. 1 J. O. Moore estate, a wildcat located about 3 miles southwest of the Baldwin field in the Dolores I.&A. Survey 143.

Sand showing oil saturation was reported from 6,600-56 ft. The hole was drilled to 6,774 ft. in shale, where 7-in. casing was run and cemented. The sand was indicated in electrical logs, and sidewall cores at 6,615 ft., 6,620 ft. and 6,625 ft. recovered sand carrying a strong distillate odor. The well was shut down for several days prior to running of casing awaiting orders as operators were undecided what to do.

In Nueces County interest also is being centered on the Stratton field, where oil production recently was opened in sands down the flank of the old distillate-gas area. There, Southern Minerals, 2 Bertrand, 933 ft. south of the discovery oil well, was testing a still deeper sand showing oil than that opened by the latter well, Southern Minerals, 1 Bertrand.

The discovery well is producing from a sand at 6,381-6,410 ft., while the second well is testing a sand at 6,907-30 ft. with casing perforations at 6,915-23 ft. The second well was drilled to a total depth of 6,935 ft., where 5½-in. casing was cemented for the test. The well also had sand showing some oil at 6,577-90 ft.

Conroe Drilling, 1 Sellers, north offset to the discovery oil well, which tested gas with a spray of oil in the discovery well's sand with casing perforated at 6,381-87 ft., has squeezed perforations and will drill to the deeper sands.

A half mile east of the field, S. E. W. Oil Corp. is rigging up to drill No. 1 Union Central for another test to the oil-bearing sands. It is located in Section 197, Palo Alto subdivision of the Bishop ranch.

The discovery of oil down the flank of the Stratton distillate field will turn attention to the development expected to get under way shortly by Richardson Petroleum Co. on the east flank of the Agua Dulce field, another major distillate producing area, a few miles north of the Stratton field. Richardson Petroleum Co. has taken a block of 1,380 acres east of the Agua Dulce field. Plans of the company call for going back into an old abandoned hole drilled by Texon Drilling Co. on the McCoy tract, and deepening the hole in prospect of finding oil downdip in the sands.

Robstown Failure

Richardson Petroleum, 1 Boy Scouts, located in the townsite of Robstown, Nueces County, as a south extension test for the new Robstown field, proved a disappointment when it failed to get production, and was abandoned. It was drilled to 6,869 ft., and had sand showing oil at 6,540-55 ft., in which several attempts to test through perforations were made.

Henderson Coquat has taken over Texas Conservative, 1 Isensee, 2 miles east of the Robstown townsite, and is carrying the test to a projected depth of 7,500 ft. It was drilling below 7,200 ft. at latest report. It had been shut down.

Stanolind Oil & Gas Co. has abandoned as dry its wildcat located in Nueces Bay about a mile south of the East White Point field. No shows were reported down to 6,500 ft., where drilling was stopped. Humble, 1-B State, in Nueces Bay, between the East White Point field on the north side of the bay and the Saxet field on the south side, and 1,850 ft. west of a gas well recently completed by that company in a 3,900-ft. sand, twisted off while drilling below 6,500 ft. and at latest report was fishing. It cored salt-water sand at 6,462-71 ft., and also got salt water in a drill-stem test at 6,046-57½ ft.

Another abandonment of Nueces County was H. D. & H., 1 State-Oso, 3 miles southwest of the Flour Bluff field. It was dry at 7,010 ft.

The new field opened by Coronado, 1 Welder, Section 9, Block E, E. Hidalgo Survey, 6 miles southeast of Seadrift, Calhoun County, has been designated as Duck Bay field. On potential test this week this discovery well flowed at the rate of 200 bbl. of fluid, 50 per cent water, through a ¼-in. choke, with 1,850 lb. working pressure on the tubing and 2,340 lb. shut-in pressure on casing. The oil is 36.4 gravity, and gas-oil ratio was 14,909 ft. to 1 bbl. The well is producing through perforations at 5,654½-55½ ft. and 6,658-59 ft. Top of sand reported was 5,634 ft.

Coronado, 2 Welder, 1,237 ft. west of the discovery well, was drilling below 4,500 ft. at latest report.

Patel Drillers, Inc., are leaving its No. 1 Daniel Gutierrez, located Block 51, Survey 579, Share 4, El Peyote grant, 5 miles northwest of Randado, Jim Hogg County, as a gas well, officially completing it for 25,000,000 cu. ft. of gas, open flow, daily. It opens a new field, with production from perforations in sand at 3,126-29 ft. Shut-in pressure is 1,000 lb.

Wade City Field

Six new producers were completed in the rapidly expanding Wade City field, Jim Wells County, the past week. Another half-mile southwest extension was made by Henderson Coquat, 1 Laging, which was completed flowing 110 bbl. daily on ½-in. choke with 540 lb. working pressure on the tubing. Casing was perforated at 4,792-94½ ft.

H. R. Cullen, 1 Washburn, L. W. Ernest Survey 88, southwest of Fullerton, La Salle County wildcat, has reached total depth of 8,000 ft. where it has been shut down awaiting orders for several days pending decision of operators whether to deepen or attempt to complete in one of several sands which were passed. The test had shows in the Wilcox around 3,600 ft., a gas-showing sand at 4,740-4,824 ft., and an oil-showing sand below 5,400 ft.

McCollum Exploration Co. has abandoned its No. 1 Rodriguez, a wildcat in the Zim area, 8 miles north of Rio Grande City, after testing salt water in sands at 1,170-74 ft. and 1,100-13 ft. Total depth was 2,786 ft.

Miller, 2 Gallagher, 1,151 ft. southeast of No. 1 Gallagher, discovery well of the Gallagher field, Jim Wells County, produced at the rate of 1,000,000 cu. ft. of gas through a 5/32-in. choke on completion potential. Pressure on tubing gaged 1,330 lb. Casing was perforated at 5,755½-57 ft., a different sand from which the first well is producing, thus the well not only extends production of the field but opens a new sand.

The week was featured by a sharp increase in the number of new operations, most of which were wildcats or important extension tests.

SOUTHWEST TEXAS COMPLETIONS

Aransas County

McCampbell field: S. E. W., 1 Young, perf. casing 7,122-34 ft., 118 bbl., ¼-in. choke.
Gillespie, 1 Humphrey, perf. casing 7,208-13 ft., 84 bbl., ½-in. choke.
St. Charles field: Continental, 2 St. Charles, 8,406 ft., 48 bbl. dist., ¼-in. choke.

Bexar County

Gas Ridge field: Southwest Drilling, 1 Covell, 740 ft., 2½ bbl., pumping.

Brooks County

Kelsey field: Humble, 48 McGill, 4,726 ft., 158 bbl., 9/64-in. choke.
Humble, 47 McGill, 4,709-22 ft., 92 bbl., 9/64-in. choke.

Burleson County

Wildcat: Barnett, 1 Fick, 3,014 ft., dry.

Duval County

Casa Blanca field: Adelon, 1-C Martin, 1,118 ft., 15 bbl., pumping.
Cedro Hill field: Magnolia, 8 D.C.R.C., perf. casing 1,451-53 ft., 35 bbl., ⅜-in. choke.
Driscoll field: Continental, 51-A Driscoll, 3,360 ft., 105 bbl. net, jetting.
Hoffman field, Magnolia, 16 Weil, 2,661 ft., 85 bbl., jetting.
Lundell field: Magnolia, 3 D.C.R.C., perf. casing 1,503-09 ft., 669,000 cu. ft. gas.
Tarancahuas field: Cox & Hamon, 9 Sophia Hoffman, 2,098 ft., 133 bbl., ⅝-in. choke.
Wildcat: Providence, 1 Driscoll, 4,208 ft., dry.
Wildcat: Forest Development, 1 Rogers, 4,307 ft., 26 bbl., 14/64-in. choke.
Wildcat: Norsworthy, 1 Feleciana, 5,010 ft., dry.

Guadalupe County

Elm Creek field: Altgelt, 1 Lenz, 705 ft., 3 bbl., pumping.
Wildcat: Evjen, 2 Brawner, 2,635 ft., dry.

Hidalgo County

Samfordyce field: Porter, 2 Flores, perf. casing 4,116-20 ft., 78 bbl., 3/32-in. choke.

Jim Hogg County

Colorado field: Sun, 3 Thaxton, 2,977 ft., 194.54 bbl., ¼-in. choke.
Humble, 15 King Ranch, 3,010 ft., 350 bbl., ¼-in. choke.
Wildcat: Patel Drillers, 1 Gutierrez, perf. casing 3,126-29 ft., 25,000,000 cu. ft. gas.

Jim Wells County

Ben Bolt field: Bridwell, 3-B Hoffman, 5,282 ft., 322 bbl., ¼-in. choke.
Gallagher field: Miller, 2 Gallagher, perf. casing 5,755½-57 ft., 1,000,000 cu. ft. gas, 5/32-in. choke.
South Alfred field: Coquat, 1 Adams, 5,282 ft., dry.
Wade City field: Anderson-Prichard, 3 Mueller, 4,918 ft., 235 bbl., ¼-in. choke.
Atlantic, 1 Mueller, 4,914 ft., 72 bbl. (30 per cent S.W.), ½-in. choke.
DeLange & Rowe, 1 McNeill, perf. casing 4,919-24 ft., 268 bbl., ¼-in. choke.
Arkansas Fuel, 2 Nollkamper, perf. casing 4,900-08 ft., 87 bbl., 10/64-in. choke.
Arkansas Fuel, 3 McNeill, perf. casing 4,921-28 ft., 80 bbl., ⅜-in. choke.
H. R. Smith, 2-A Nollkamper, perf. casing 4,810-14 ft., 201½ bbl., ¼-in. choke.
East Alice field: Howell, 1 Cook, perf. casing 5,140-60 ft., gas distillate.

Live Oak County

Oakville field: Moore, 3 McGriff, 1,826-32 ft., 81.25 bbl., ¼-in. choke.
White Creek field: Brauer & Smith, 10 Gayle, perf. casing 1,453-64 ft., 100 bbl., pumping.
Wildcat: West, 1 Raschke, 1,356 ft., dry.

McMullen County

South Calliham field: Morris Drilling, 4 Meier, 1,017 ft., dry.
Wildcat: Texas, 1 La Chusa, 2,204 ft., dry.
Wildcat: Cities Service, 2 Rhodes, 3,111 ft., dry.

Nueces County

Agua Dulce field: Union Producing, 1 Austin, perf. casing 6,919-39 ft., 57,900,000 cu. ft. gas and 20 bbl. dist., open flow.
Robstown field: Richardson Petroleum, 1 Boy Scouts, 6,869 ft., dry.
Minnie Bock field: Windsor, 5 Howze, perf. casing 3,817-19½ ft., 48 bbl., 10/64-in. choke.
South Clara Driscoll field: Magnolia, 1 Dallas, perf casing 3,829-20½ ft., 65 bbl., 3/32-in. choke.
Wildcat: Stanolind, 1 State, 6,502 ft., dry.
Wildcat, H. D. & H., 1 State-Oso, 7,010 ft., dry.

Refugio County

Tomoconnor field: Quintana, 23-A Williams, perf. casing 5,872-80 ft., 628.72 bbl., ¼-in. choke.

San Patricio County

Midway field: Midway Victory, 3-B Floerke, perf. casing 5,335-37 ft., 55 bbl. net, 11/64-in. choke.
Palm Meadow, 1 Coggin, perf. casing 5,334-37 ft., 75 bbl., 7/64-in. choke.

Starr County

Rincon field: Davis, 14-A Slick, perf. casing 4,095-4,110 ft. and 4,120-30 ft., 175 bbl., ¼-in. choke.
South Ricaby field: Baldridge & Vessels, 2 Martinez, 1,782 ft., dry.
Sun field: Humble, 1 Montalvo, perf. casing 4,885-4,902 ft., 57.29 bbl., 1½-in. choke.

Webb County

Adami field: Bosco, 2 Adami, 1,000½ ft., 22 bbl., pumping.
Glen field: Holland & Simmons, 1 Bruni, 2,172 ft., 150 bbl., pumping.
Holland & Simmons, 2 Bruni, 2,192 ft., 198 bbl., pumping.
Holland & Simmons, 4 Bruni, 2,179½ ft., 306 bbl., pumping.
Interstate Minerals, 48 Lopez, 2,184 ft., 284 bbl., 3 hours, open 2½-in. tubing.
Interstate Minerals, 50 Lopez, 2,175 ft., 110 bbl., 1 hour, open 2½-in. tubing.
Killam, 4 Bruni, 2,186½ ft., 150 bbl., pumping.
Transwestern, 5 Bruni, 2,170½ ft., 226 bbl., pumping.
O'Hern field: Magnolia, 48 Brennan-Benavides, perf. casing 1,628-43 ft., 1,930,000 cu. ft. gas, 2-in. open tubing.
West Cole field: Magnolia, 7 Benavides, 2,361 ft., 27 bbl., pumping.
Wildcat: Smith & Storey, 1 Walker, 2,498 ft., dry.

Victoria County

Heyser field: Gulf, 37-B Traylor, 5,491 ft., 104 bbl., 3/32-in. choke.

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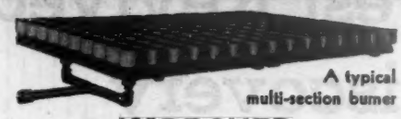

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OIL AND GAS JOURNAL

McFaddin field: Barnsdall, 37 McFaddin, 4,391 ft., 60 bbl., 7/64-in. choke.
Transwestern, 24-E McFaddin, 6,460 ft., 81 bbl., 3/32-in. choke.
Telferner field: Colton, 2 Strake, 2,777 ft., dry.
Wildcat: Goldson, 1 Keeran, 7,500 ft., dry.

Zapata County

Comita field: Nash, 36-A Haynes, 1,139 ft., 15 bbl., pumping.
Escobas field: Dullip, 7 Trevino, 1,365 ft., 60 bbl., pumping.

Zavala County

Wildcat: Wilcox, 1 Webb & Brown, 176 ft., dry.

SOUTHWEST TEXAS WILDCATS

Calhoun County

Coronado, 2 Weider, E. Hidalgo Sur., Duck Bay field. Drlg. sh. 4,500 ft.

Duval County

Continental, 1-B Robert Driscoll, B.S.&F. Sur. 481. Drlg. 3,621 ft.
Sam Cunningham, 1 Dunn, Diego Hinojosa grant. Drlg. sh. 2,512 ft.

Goliad County

J. K. Culton, 1 S. E. Cole, Goliad Town Tr. T.D. 5,582 ft., fishing.

Jim Hogg County

Humble, 4 Mestena, Diego Hinojosa grant. Drlg. 4,621 ft.

La Salle County

H. R. Cullen, 1 A. L. Washburn, H.&G.N. Sur. 67. S.D.; W.O. 8,000 ft.
H. R. Cullen, 1 Wildenthal, J. McMullen and J. McGloin Sur., Blk. 69. Cmtd. surf. csg. 2,500 ft.

Live Oak County

Continental, 1 Cartwright, J. Sandman Sur. 32. Drlg. sh. 3,405 ft.

Nueces County

Humble, 1-B State, Tr. 706, T.D. 6,500 ft., fishing.
Fred W. Shield, 1 J. O. Moore, De Lores I.&A. Sur., Sec. 143. T.D. 6,774 ft.; cmtd. csg.; S.O. 6,600-56 ft.
Henderson Coquat (Texas Conservative), 1 Isensee, Gregorio Farias Sur. Drlg. sh. 7,215 ft.

California Fields

(Continued from Page 63)

lease. First well ran into fault and rig was skidded across fault.

Lompoc—Santa Barbara County

Tide Water Associated, 1 Sousa 12-6n-33w
This wildcat spudded in and cemented at 336 ft.

Goleta—Santa Barbara County

Texas, 1 Bishop 13-4n-29w
Drilling ahead at 1,410 ft. This well located on seismograph shot.

Sespe—Ventura County

Merchants, 8 Cochran 1-4n-20w
This well, located on top of high hill, is being carried down into Eocene for deep test. Present depth is 2,480 ft. and progress has been slow.

Ventura Avenue Field

British-American, 1 Barnard 22-3n-23w
This well bottomed in deep 57 zone but liner has been found to be in bad condition. Reconditioning. T.D. 9,490 ft.

Oklahoma Fields

(Continued from Page 60)

Pure, 1 Thomas ..... NE SE NW 28-5s-7

Caddo County

Ohio, 4 Rigney ..... NW SW SE 12-5-9w

Carter County

Magnolia, 5 Love-Johnson ..... NE SE NE 32-1s-3w
Daube, 31 W. & D. ..... SE SW SE 14-4s-3w

Creek County

Smith, 2 fee ..... NE NW SE 26-19-7
Curtis, 3 Larremore ..... C SW NW 10-19-9

Hughes County

Mid-Continent, 6 Harjoge ..... NE SE SE 31-7-8

Kiowa County

Lewis, 1 Wooten ..... SE SE 28-7-17w

Okfuskee County

Droppleman, 2 Dill ..... NW SW SW 35-12-8

Noble County

Palmer, 1 Reilly ..... NW NE NW 27-23-2w

Pawnee County

Watchorn, 19 Miller ..... SW NW SE 33-23-3

Payne County

Mid-Continent, 2 Johnson ..... CEL SW SE 2-17-1
Texas, 4 Minnich ..... CSL NW NE 11-17-1

Pittsburg County

Public Service, 3 Carney ..... NW SW NW 16-7-18

Seminole County

Davis, 2 Slaughter ..... SE NE SW 34-6-5
Newsom, 1 Oakes ..... SE SW 16-7-6

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	July 21		July 14			
Intercoastal-domestic—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	37,557	5,365	.....	.....	307,122	381,403
Fuel oil	.....	.....	.....	.....	188,938	1,234,523
Diesel and gas oil	.....	.....	.....	.....	.....	163,501
Gasoline	250,408	35,773	.....	.....	1,835,969	2,017,483
Kerosene	.....	.....	.....	.....	.....	122,200
Foreign exports—						
Crude oil	80,021	11,432	69,263	9,895	7,456,364	8,248,637
Fuel oil	45,929	6,561	200,725	28,875	4,545,292	4,945,416
Diesel and gas oil	6,644	949	104,515	14,931	3,511,206	4,046,377
Gasoline	42,421	6,060	34,769	4,967	2,692,524	3,990,172
Kerosene	.....	.....	.....	.....	645,071	917,911
Lubricants	28,332	4,047	.....	.....	107,466	86,172
Coastwise-domestic—						
Crude oil	225,155	32,165	.....	.....	5,001,378	6,971,988
Fuel oil	113,068	16,153	148,630	21,223	7,915,938	5,132,868
Diesel and gas oil	41,453	5,922	22,039	3,148	1,524,222	1,317,211
Gasoline	615,783	87,969	215,552	30,793	9,287,162	8,711,362
Kerosene	16,438	2,348	6,958	994	319,663	228,134

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Fuel oil	.....	.....	.....	.....	67,840	124,055
Diesel and gas oil	.....	.....	.....	.....	281,260	69,550
Asphalt	.....	.....	.....	.....	315,788	353,166
Lubricants	.....	.....	.....	.....	11,151	19,534
Foreign exports—						
Crude oil	107,992	15,427	238,831	34,119	2,432,787	3,116,792
Fuel oil	60,853	8,693	83,887	11,984	1,330,736	1,682,722
Diesel and gas oil	35,982	5,140	67,705	9,672	1,642,211	1,538,562
Gasoline	50,038	7,148	84,655	12,094	1,514,160	1,627,119
Kerosene	9,537	1,362	9,876	1,411	365,686	366,647
Asphalt	.....	.....	.....	.....	.....	6,919
Lubricants	.....	.....	20,800	2,971	287,117	394,983
Other finished oil	.....	.....	.....	.....	738	352
Coastwise-domestic—						
Fuel oil	.....	.....	62,884	8,983	2,995,883	3,474,165
Diesel and gas oil	9,848	1,407	7,131	1,019	621,990	627,739
Gasoline	88,702	12,672	70,395	10,056	3,750,984	4,238,971
Kerosene	11,541	1,649	2,618	374	316,707	459,196

TOTAL TANKER SHIPMENTS FROM CALIFORNIA TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Crude oil	37,557	5,365	.....	.....	307,122	381,403
Fuel oil	.....	.....	.....	.....	256,778	1,358,578
Diesel and gas oil	.....	.....	.....	.....	281,260	233,051
Gasoline	250,408	35,772	.....	.....	1,835,969	2,017,483
Kerosene	.....	.....	.....	.....	.....	122,200
Asphalt	.....	.....	.....	.....	315,788	353,166
Lubricants	.....	.....	.....	.....	11,151	19,534
Foreign exports—						
Crude oil	188,013	26,859	308,094	44,013	9,889,151	11,365,429
Fuel oil	106,782	15,253	284,612	40,659	5,876,028	6,628,138
Diesel and gas oil	42,626	6,089	172,220	24,746	5,153,417	5,584,939
Gasoline	92,459	13,208	119,424	17,061	4,206,684	5,614,291
Kerosene	9,537	1,362	9,876	1,411	1,010,757	1,284,558
Asphalt	.....	.....	.....	.....	.....	6,919
Lubricants	28,332	4,047	20,800	2,971	394,583	481,155
Other finished oil	.....	.....	.....	.....	738	352
Coastwise-domestic—						
Crude oil	225,155	32,165	.....	.....	5,001,378	6,971,988
Fuel oil	113,068	16,153	211,514	30,216	10,911,821	8,607,033
Diesel and gas oil	51,301	7,329	29,170	4,167	2,146,212	1,944,950
Gasoline	704,485	100,641	285,947	40,850	13,038,146	12,950,333
Kerosene	27,979	3,997	9,576	1,368	636,370	687,330

By R. MARNE SANFORD

Important Slaughter-Duggan Link Near Completion

MIDLAND, Tex., July 29.—Together with the closely watched wildcatting between the Slaughter and Duggan fields in the North Permian basin area of West Texas are several other areas where exploration is being carried on intensely. These areas include the northern part of Pecos County where several deep wildcats are seeking production from the Ordovician level, the Todd deep area in Crockett County where development proceeds from the deep Strawn level recently opened, and the Holt area in Ector County where extension work continues.

SOUTHERN WEST TEXAS

Perhaps the most intense and definitely the most costly wildcat area in West Texas is the northern part of Pecos County. This district has been receiving deep exploratory drilling almost continuously for the past 4 or 5 years, the results being only one field to date. At the present time there are three deep operations active in the area and one indicated field opener just south of the Apco field which remains shut in without official gage. Newest operation to get under way was Taubert, McKee & Siemoneit Drilling, 1 Crockett, a scheduled 6,500-ft. wildcat located in the SW Section 4½, Block 3, H.&T.C. Survey. Surface casing has been set and it is drilling ahead.

Other active operations in the area are Patillo, 1 O'Neal, which is north of the Apco field, and Plymouth Oil, 1 Levy, in the extreme northern corner of Pecos County. Both tests are drilling ahead below 6,100 ft.

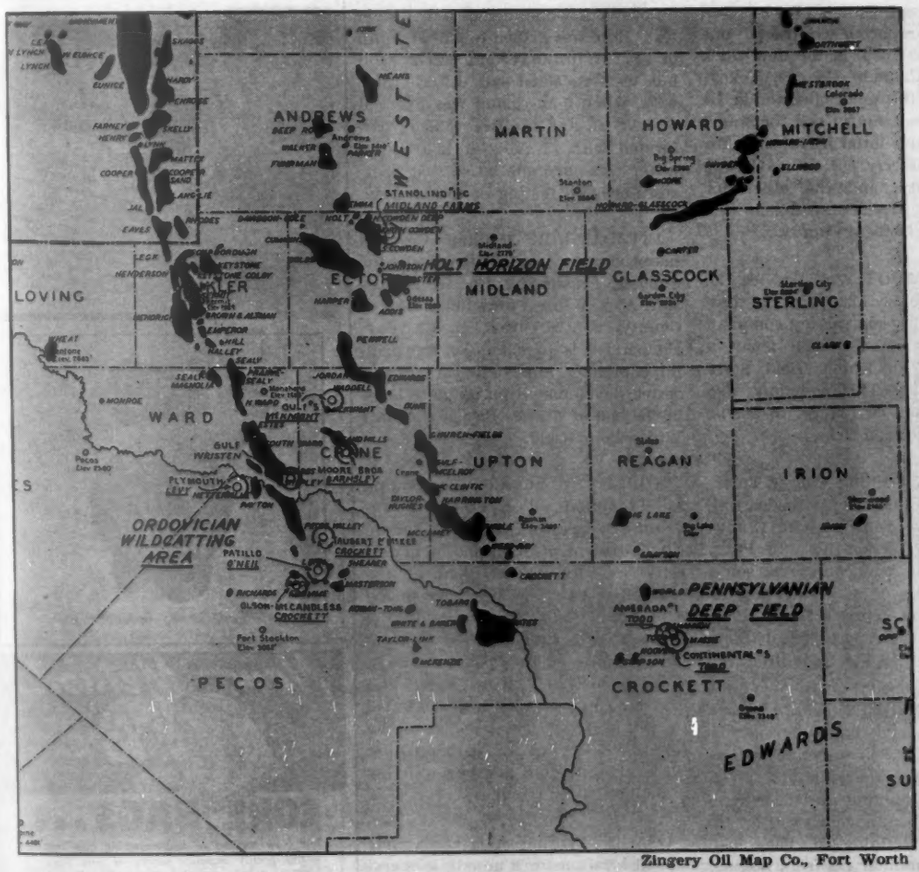
East of Pecos County and in central Crockett County, development proceeds in the Todd deep field opened several months ago by Continental Oil Co. on the vast Todd ranch. Four producers have been completed from the Strawn level and recently Amerada Petroleum Corp. and the Continental Oil Co. both made locations. The former firm staked its No. 1 Todd as a half-mile west outpost for the field, while the latter firm located its No. 5 Todd in the field proper.

Ector County's widespread but comparatively little explored Holt area was given a new test during the week. The location is 1¼ miles east of regular production in the North Cowden field and is about 6 miles east and slightly south of production from the Holt horizon on the west side of the North Cowden field. The site was staked by Stanolind Oil & Gas Co. and it will be its No. 1-C Midland Farms, NW SW Section 35, Block 42, Township 1n, G.&M.M.B.&A. Survey. The Holt horizon occurs about 1,000 ft. below the North Cowden field pay or at about 5,200 ft.

Testing Field Openers

Ward County's field discovery of several weeks ago, after having been shut in for some time, was opened last week for further testing. It is Kenneth Slack, 1 Hayes, Section 148, Block 34, H.&T.C. Survey, in the northwestern part of Ward County. Bottomed at 5,088 ft. in the Delaware sand, the well flowed 21,262,000 cu. ft. of sweet gas with a spray of oil through open casing on initial tests several weeks ago. Tubing was run at that time but became plugged with cavings. At latest reports the tubing was being pulled preparatory to rerunning and testing for completion gage. Despite the fact that the well will open a gas field, it marks the completion of one of the few Delaware sand fields in West Texas.

Between the O'Brien and the Halley fields in southern Winkler County, Gulf, 136 O'Brien, Section 11, Block F, G.&M.M.B.&A. Survey, is indicating a new field from the 3,000-ft. level. Plugged back from a total depth of 3,187 ft. where water was found, the well is cleaning out after a 600-qt. shot from 2,729-2,960 ft. There was 1,400 ft. of oil in the hole when it was cleaned out to 2,890 ft.



Zingery Oil Map Co., Fort Worth

Several areas in the Permian basin are drawing wildcat activity. The most active is the northern part of Pecos County where work goes ahead in search of deep Ordovician production. A new wildcat is starting in the Holt area of Ector County and new outposts have been staked to the Strawn area in Crockett County

SOUTHERN WEST TEXAS COMPLETIONS

(24-hour gages)

Crane County

Jordan field: Texas, 4-A University, 1,666 bbl., 3,528-60 ft.

Crockett County

Soma field: Gregory & McCandless, 1 Shannon, dry at 2,508 ft.

Ector County

Foster field: Arrow Drlg., 12 Foster, 987 bbl., 4,168-4,298 ft.
Stanolind, 44 Witcher, 1,439 bbl., 3,890-4,114 ft.
North Cowden field: Arrow Drlg., 2 Midland Farms, 704 bbl., 4,432-4,523 ft.
Barnsdall, 12 Smith, 850 bbl., 4,060-4,210 ft.
Johnson field: Broderick & Calvert, 7-A Johnson, 497 bbl., 4,143-4,310 ft.
Broderick & Calvert, 8-A Johnson, 466 bbl., 4,136-4,273 ft.
I.T.I.O., 2-D Johnson, 663 bbl., 4,050-4,155 ft.
Schermerhorn, 8-B Johnson, 336 bbl., 4,021-4,166 ft.
Goldsmith field: Phillips-Pure, 97 Cowden, 2,138 bbl., 4,091-4,146 ft.
Jordan field: Cities Service, 4-C University, 757 bbl., 3,511-66 ft.

Upton County

McCamey field: Gulf, 3-B Sherk, 114 bbl., 2,615-2,708 ft.

Ward County

South Ward field: P. Clawson, 1 Hayes-Monroe, 18 bbl., 2,165-2,251 ft.
Estes field: Texas Co., 4-E University, 729 bbl., 2,420-80 ft.

Winkler County

Keystone field: Sharp, 2 Crume, 221 bbl., 3,355-3,420 ft.
Lyman, 2 E. W. Cowden, 833 bbl., 2,710-3,020 ft.
Standard of Texas, 11-12 Baird, 225 bbl., 3,234-3,406 ft.

WILDCAT OPERATIONS

Crane County

Gulf, 5 M. B. McKnight, Sec. 1, Blk. 21-B, P.S.L. Sur. Coring below 7,394 ft.
Gulf, 1-F University, SE SE Sec. 22, Blk. 31, Univ. Sur. Drlg. 3,100 ft.
Gulf, 12 Waddell, Sec. 30, Blk. 26-B, P.S.L. Sur. S.O. 3,215-20 ft.; S.S.G. 3,635 ft.; 8-in. csg. cmtd. 3,713 ft.; S.O. wtr. 3,763 ft.; tstg. 3,780 ft., mostly wtr.; topped 13,000,000 cu. ft. gas at 4,385 ft.; est. 500 B.O.P.D.; drlg. by tools 4,406 ft.; flwd. 248 B.O. in 8½ hrs.; taking official gage.
Moore Bros., 2 Barnsley, NE NE Sec. 42, Blk. 32, P.S.L. Sur., 3 mi. SE of Gulf Oil Corp.'s discovery well, No. 1-A Tubb. Spdg.

Crockett County

M. & M., 1 G. Bouscaren, SE cor. NW Sec. 29, Blk. GG, H.E.&W.T. Sur., 1 mi. N of Soma discovery well. Gas blowout of 50,000,000 cu. ft. at 1,512 ft.; well now shut in for completion.

Hudspeth County

Haymon Krupp, 1 Briggs, Sec. 24, Blk. 73, Twp. 7, T.&P. Sur. Setting 5½-in. pipe 6,206 ft.

Pecos County

Plymouth, 1 Richard Levy, SW cor. Sec. 104, Blk. 8, H.&G.N. Sur. Drlg. below 6,100 ft.
Taubert, McKee & Siemoneit, 1 Crockett, SW Sec. 4½, Blk. 3, H.&T.C. Sur. Drlg. below surf. csg.

Reagan County

R. E. Ringo, 1 fee, 1,320 ft. from N and W lines of Sec. 22, Blk. K, 3,500-ft. test. Drlg. 2,150 ft.

Sutton County

Domain, 1 G. S. Allison, SW NE Sec. 91, Blk. 9, T.W.& N.G. Sur., Ellenburger L. test. Drlg. 985 ft.

Ward County

Gulf, 5 Wristen, Sec. 13, Blk. 5, H.&T.C. Sur.; scheduled Ordovician test. Drlg. 8,688 ft.
Sinclair Prairie, 1 Wirt Davis, 330 ft. NW, 2,310 ft. SW lines Sec. 32, Blk. 4, H.&T.C. Sur.; 3,500-ft. test. Drlg. 950 ft.

Winkler County

Gulf, 136 O'Brien, SE SW Sec. 11, Blk. F, G.&M.M.B.&A. Sur. Wtr. at T.D. 3,187 ft.; P.B. 2,970 ft.; tstg. some oil.

(Continued on Page 78)

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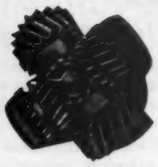

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Among the Drilling

DELTA Drilling Co., Tyler, Tex., signed a contract last week for the drilling of a wildcat for Kangerga Brothers and T. P. Cannon of Henderson. The drilling is conditioned on the results obtained from lease titles which are at present being examined. It is located in the R. Lane Survey and is tentatively contracted to 7,500 ft. for a test of the deep Trinity series.

W. BLAND OMOHUNDRO, drilling contractor and independent operator of Wichita Falls, Tex., has taken over the old Wood Petroleum block on the Kemper land, about 4 miles northeast of Jolly, in Clay County, North Texas, and will go to a depth of 5,600 ft. A derrick has been erected on the location 330 ft. from the south and west lines of Block 44, Bosque County school lands, and drilling will start within a short time. The old hole, abandoned about 2 years ago, was drilled to 4,268 ft.

ALLEN & MORRIS, San Antonio, Tex., are keeping their rigs busy on previously reported contracts, one for Coronado Corp. in the new Duck Bay field, Calhoun County, Texas; another for the same operator at La Rosa, Refugio County; one for Shield Oil Co. in the latter field; one for American Liberty Oil Co. at Bruni, Webb County, and the other for Norsworthy Production Co. in the Fagan field, Refugio County.

COMPLETE Oil Well Service Co. is drilling below 4,220 ft. in a wildcat this drilling-contracting company is putting down for itself about a mile east of the Rincon field, Starr County, Texas. This company also has a rig running for W. R. Davis, Inc., in the Rincon field.

HERNDON Drilling Co., of Tulsa, at its No. 1 Montgomery, a wildcat 1½ miles southeast of the Iuka (Simpson) pool, SW Section 13-27-13w, Pratt County, Kansas, encountered some light showings of oil in drilling to 4,273 ft. in the Simpson series. The operator at last report was drilling ahead to the Arbuckle dolomite.

HOUSH & THOMPSON have moved the rig they have had running for Bel Oil & Gas Co. at North Elton, Allen Parish, Louisiana, to East Hackberry, Cameron Parish, where these contractors have a contract to drill for Gulf Refining Co. They also have moved another rig from Louisiana to Hull, Tex., to drill another deep test for Gulf Oil Corp. in the latter field. The same contractors are rigging up to drill another wildcat for Harrison & Abercrombie in the Shepherd area of San Jacinto County, Texas. This test, located on a Sun Oil Co. fee tract about 3 miles south of Shepherd, will be the third for Harrison & Abercrombie. The contractors' only other active rig at present is at Eola, Avoyelles Parish, Louisiana, where it has been kept busy for Gulf Refining Co.

LOFFLAND BROTHERS have contracted to drill a deep test for J. Newton Rayzor in the Seabrook area, on the west side of Galveston Bay, in Harris County, Texas. Location already has been made in the Rison Morris Survey, about 4 miles north and a little west of Seabrook, and rig is being moved in.

PORTABLE Drilling Co., Tulsa, and Elson & Conhaim at their No. 1 Murphy in NW Section 20-19-2e, west of Stillwater in Payne County, Oklahoma, at the week end was perforating the Hunton lime to test a show of oil previously obtained on a drill-stem test. Hole was drilled to a total depth of 4,871 ft. in the second Wilcox sand but tests revealed salt water. Likewise, when 5-in. casing was lowered to 4,838 ft. and the first Wilcox perforated with 18 shots at 4,557-64 ft., water was encountered so that operators ordered testing of the Hunton.

FITZPATRICK Drilling Co. has taken contract to drill two wells for Sinclair Prairie Oil Co. in Nueces Bay, East White Point field, Nueces County, South Texas. H. C. "Pat" Fitzpatrick is president of the drilling company. Sinclair is carrying on active development on its state lease in the bed of Nueces Bay at the East White Point field.

NOBLE Drilling Co., contracting for Stanolind Oil & Gas Co., was drilling plug over the week end in No. 2 Hulen, a directionally drilled relief well for No. 1 Hulen, an uncontrolled discovery producer in the Alta Loma field, Galveston County, Texas. No. 2 Hulen drilled into the hole of No. 1 at a point about 700 ft. off bottom (9,112 ft.). Water and mud are to be pumped into the latter to kill its flow. Total depth of the relief well is 8,466 ft. Noble Drilling Co. also is drilling another well for Stanolind at Alta Loma.

OSAGE Drilling Co., Inc., has staked location for a new link operation between the Slaughter and Duggan fields in the north Permian basin area of West Texas. The opera-

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tion is No. 1 W. R. Blake, located in the NW cor. Labor 1, League 53, Scurry County School Lands Survey. It is about 1½ miles southeast of Atlantic Refining Co.'s No. 1 Boyd, a producer on the east edge of the Duggan field in Cochran County.

J. W. RUSSELL, drilling contractor of Kilgore, Tex., has been awarded the drilling of an 8,500-ft. wildcat test in the East Texas basin. It will be drilled for Plains Production Co. (headed by D. Harold Byrd, Dallas) and by Hunter & Rowe of Dallas. Location in the little-explored Wood County, the wildcat is No. 1 Stanley I. Smith, staked on a 300-acre tract and located in the SE cor. of the Santiego Calderon Survey. It is on a 5,000-acre block which was geologized by Al Bierman of Tyler, Tex. Rig is being moved to location for immediate spudding.

NOBLE Drilling Co., Tulsa, has been awarded contract by Stanolind Oil & Gas Co. for the drilling of a deep Holt horizon wildcat on the east side of the North Cowden field in Ector County, West Texas. It will be No. 1-C Midland Farms, located 1,980 ft. from the south line and 660 ft from the west line of Section 35, Block 42, Township 1n, G.&M.M. B.&A. Survey. The location is about 1½ miles east of Big lime production in the North Cowden field and about 6 miles east and slightly south of production from the Holt horizon. The horizon is found at about 5,200 ft. on the west side of the North Cowden field; however, the new test is projected to 5,500 ft.

CHRISTIAN-CARPENTER Drilling Co. has contracted to drill a well for Continental Oil Co. in the Ogburn area, Harris County, Texas. Location for this well on the Sweeney tract is about 5,000 ft. east of the area's discovery producer, recently completed, and which was drilled by the same contractor.

MORRIS Drilling Co., of Calliham, Tex., has moved rig for another shallow test on the Meier tract, James Garner Survey, South Calliham field, McMullen County, Texas.

SOUTHWEST Drilling Co., of San Antonio, Tex., is drilling another well for itself on the Covell tract, in the Gas Ridge field, Bexar County, Texas.

HARRY WIRICK and Kirk Green, of Tulsa, and Sam Vierson and H. R. Cochran of Okmulgee, Okla., were building tanks and setting separator at the close of the week at their test west of Davenport pool in Lincoln County, Oklahoma. Their No. 1 Bell in SW NE Section 5-14-5e had a showing for a Prue sand pool opener at a total depth of 3,533 ft.

Second well in the Mattoon pool, Coles County, Illinois, is being drilled by this crew of Noble Drilling Co., Tulsa. From left to right: Bill Muckolls and Henry Barrett, Carter Oil Co. geologists; H. W. Wright, driller; R. L. Rigsby, motorman; Dick Favor, derrickman

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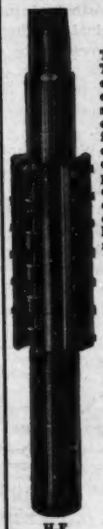

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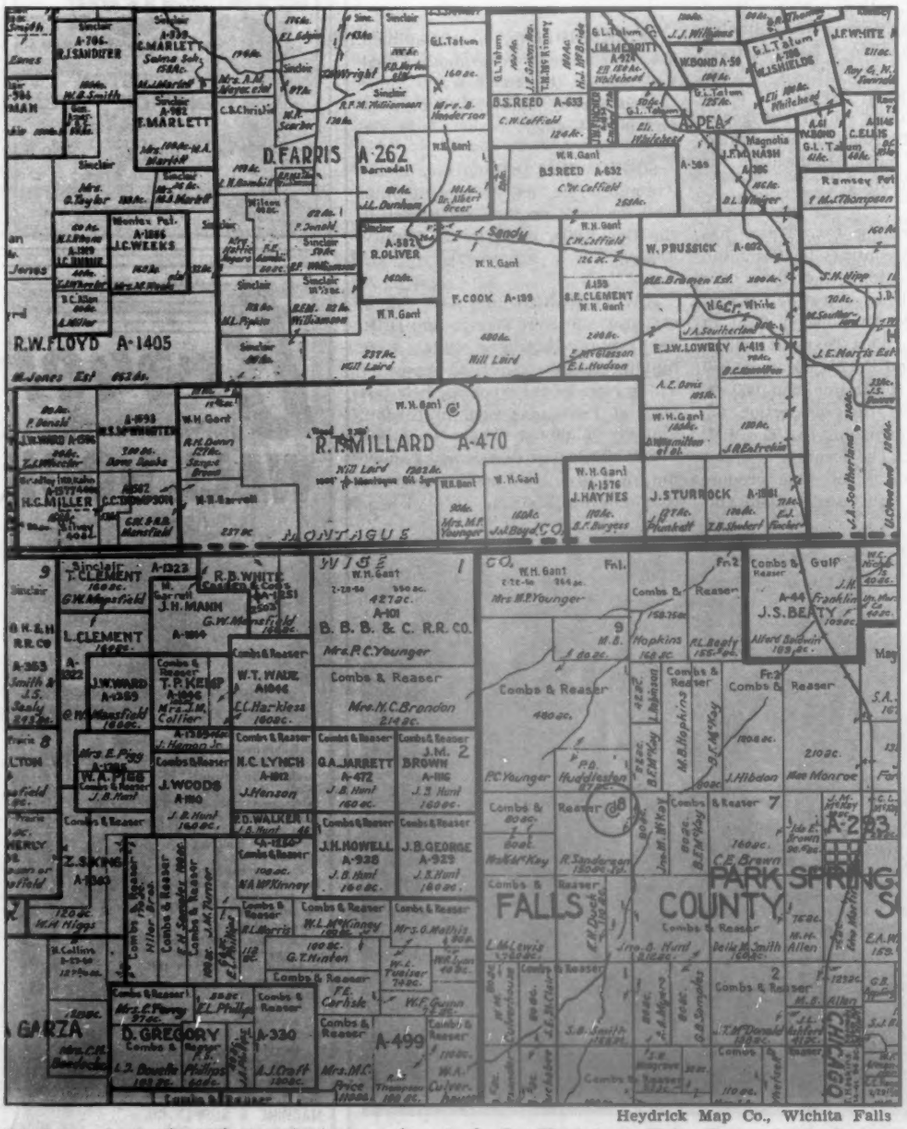
Two Saturated Sands Found In Southern Montague Test

By
R. MARNE SANFORD

WICHITA FALLS, Tex., July 29.—A new discovery in extreme southern Montague County and one which extends the Fort Worth basin production about 30 miles south of its original starting point, marked the results of the week's efforts in the district. Following up the extremely large number of wildcat hits throughout the area during the past few weeks, a total of eight new wildcat locations were made in seven different counties this week.

Leading the interest was Walter Gant, 1 Laird, wildcat located in extreme southern Montague County, just a mile north of the Wise County line. About 10 days ago a show of oil estimated sufficient for commercial production was drilled from 5,772 to 5,802 ft. During the past week another show was drilled from 5,845-56 ft. The second zone to show saturation was believed the better of the two, it being the typical conglomerate section found in almost all of the other discoveries in the area during the past 6 months. The No. 1 Laird is in the R. T. Millard Survey, 5 miles southwest of Fruitland. With the test contracted to 6,000 ft. the operators are expected to drill to the projected depth and plug back for completion.

This latest discovery is just north of a well-known wildcat drilling block which has attracted attention at intervals for the past 2 years. At several different times deep tests have been reported for the block, none having ever been completed. Still shown as the Combs & Raeser block on most maps, Rogers & Cranfill now have the acreage, about 8,000 acres in all, and are preparing to start a wildcat test in the northeast corner of Section 8, Falls County School Lands Survey, just northwest of Park Springs and between that town and the Walter Gant discovery of this week. The new location is about 2½ miles south and slightly east of the Gant discovery. The Rogers & Cranfill test is tentatively contracted to 7,500 ft. and will be drilled following the completion of the Gant well.



Heydrick Map Co., Wichita Falls

Bringing production the farthest south of any producer in the Fort Worth basin, Walter Gant, 1 Laird, almost on the Montague and Wise county line, bid again for commercial production during the week as a second zone of saturation was drilled which was believed would make production. A new location has been tentatively made southeast of the discovery and in northwestern Wise County

New Wildcats

The list of new wildcat starts for the week included a new location and a deepening job in Clay County. The location was staked by Jones Associated Oil and Roberts & Lynn of Oklahoma City, and is to be their No. 1 Bryant Edwards, spotted 1,336 ft. from the north line and 1,345 ft. from the east line of Block 40, Madison County School Lands Survey, in the northeastern part of the county and 4½ miles northwest of Ringgold. Contracted to 6,500 ft., the test is the same as was tentatively located about 2 months ago by Harris Drilling Co. on the block then held by Roy Laird. Contract has been let for the new operation and machinery is being moved to the drill site.

Clay County's second operation is by L. T. (Bobby) Burns, Wichita Falls, and will be the deepening of the operator's No. 1 Calloway, Block 9, Hopkins County School Lands Survey, in the south central part of the county. The test was drilled to a total depth of 5,360 ft. following the discovery of the Burns field in southwestern Clay County last year. The new contract depth is 6,000 ft.

Wichita County received a new wildcat operation when E. P. Bowen, Wichita Falls, announced a test in the William Anglin Survey, Abstract 2, north of Wichita Falls. Several spreads in the operator's block have been taken by major companies; however, the definite location has not been made. The test is scheduled for spudding by September 1.

A new wildcat for Fannin County was indicated when Bassett, Fleming & Duncan reportedly signed a contract for a 4,000-ft. operation 4 miles northwest of Honey Grove. The exact location was not announced; however, materials are being moved in for spudding this week.

A wildcat test has been staked northeast of the Bonita field in eastern Montague County by E. C. Norwood as his No. 1 Holland, a 6,000-ft. operation located in the SW cor. M. Montalba Survey, ¾ mile northeast of production in the field proper.

In Jack County Continental, 1 Robertson, is a new location staked in the SW cor. of M. J. Swan Survey, 1½ miles south of the Cooper-Stead discovery area of last year.

NORTH TEXAS AREA COMPLETIONS
(24-hour gages)

Archer County

Hull-Silk field: Blackwell Oil & Gas, 9 Wilson, 901 bbl., 3,805-29 ft.
Cochran & Cain, 8 Little, 13 bbl., 537-47 ft.
R. C. Lipscomb, 6 Wilson, 1,030 bbl., 4,308-48 ft.
Anarene field: Golden, 1 King, dry at 1,425 ft.
Panhandle Refg., 47 Green, 30 bbl., 1,105-17 ft.
Petroleum Producing, 22 Richardson, 51 bbl., 1,255-62 ft.

Clay County

Wildcat: J. E. Farrell, 1 Malone, dry at 6,750 ft.
Thornberry field: Bridwell, 14 Edrington, dry at 1,543 ft.
Halsell field: Bridwell, 5 Halsell, 800 bbl., 4,758-95 ft.

Cooke County

Walnut Bend field: Sinclair Prairie, 18 Best, 588 bbl., 4,913-24 ft.

Jack County

Bryson field: Gwynn & Overbey, 1 Epperson, 440 bbl., 3,137-76 ft.
Harper & Knappenberger, 1 Crum, dry at 3,248 ft.
Three Bee Investment, 3 Rhodes, 375 bbl., 3,104-88 ft.

Montague County

Nocona field: Hughes, 1 Hinton, dry at 946 ft.
Pure, 12 Keck, 38 bbl., 820-38 ft.
Bonita field: Sinclair Prairie, 1 Lee, 3,050 bbl., 5,404-38 ft.

Wichita County

Texhoma field: Corbett, 1 Murph, dry at 1,380 ft.
Andrews, 1 Kenworthy, dry at 560 ft.
Electra field: Bishop Oil, 3 Waggoner, dry at 1,859 ft.
Dorian & Mitchell, 13 Mitchell, dry at 1,345 ft.
Davis, 6 Jones, dry at 828 ft.
Hunter, 48 Waggoner, 20 bbl., 1,326-43 ft.
K.M.A. field: Cooper, 33 Waggoner, 385 bbl., 3,585-3,665 ft.
Davis, 4 Jones, 655 bbl., 3,991-4,089 ft.
Fain-McGaha, 20 Griffith, 831 bbl., 3,806-26 ft.
F.H.E. Oil, 2 Strauss, 680 bbl., 3,793-3,872 ft.

(Continued on Page 83)

Wildcat Activity Increasing In Coastal District

By NEIL WILLIAMS

HOUSTON, Tex., July 29.—A definite increase in drilling activity, particularly in wildcat exploration, was evident on the Texas Gulf Coast the past week. Around many of the newer, as well as some of the older fields, new extension developments got under way. In addition, important tests were started on a number of interesting prospects that so far have had no production, and in some cases no previous drilling.

One of these new prospects is another marine location in Galveston Bay. On this prospect, located in the bed of the bay about 3 miles east of Bolivar, Texas Co. has made location for No. 1 State-Tract 237. This particular test, which is scheduled to be drilled at least to 8,700 ft., is nearly a mile southeast of a 7,700-ft. dry hole drilled by Standard Oil Co. of Texas and Salt Dome Oil Co. the past year.

In the meantime, Humble Oil & Refining Co. still is trying to make a well in its No. 1-A State-Tract 247, a wildcat on another prospect in Galveston Bay, located at Red Fish Reef, off the shore of Chambers County. Several production tests have been made in this well, although none has been satisfactory. The hole was drilled to 9,448 ft., and with 7-in. casing at 9,225 ft., the hole was plugged to 8,818 ft. With pipe perforated at 8,815-16 ft., the well flowed three-quarters of a barrel of distillate and 37,000 cu. ft. of gas per hour through ⅛-in. by 6-in. positive choke on the tubing, registering a working pressure of 2,950 lb. The well since has been killed, and these perforations squeezed, and other sands will be tested.

Greens Bayou Test

The latter company has rigged up for its first test on a prospect in the long-watched Greens Bayou area, Harris County, east of Houston. Location for this test, No. 1 M. O. Furr, is on a 61-acre tract in the S. Singleton Survey, 5½ miles northwest of Lynchburg. It is being projected to a depth of 9,500 ft.

Landreth Production Co. and Keystone Royalty Co. are starting another test in the North Houston area, Harris County. This test, No. 2 Sutherland-Kraft-Buck, is 1,150 ft. north of No. 1 which was completed as a gas well. The location is in Block 4, Section 24, of Washington County R.R. Survey, northeast of the Fairbanks field.

Ogburn Field

Additional development is getting under way in the Ogburn area of Harris County, where production was opened a couple of months ago. Continental Oil Co. has made location for No. 1 Sweeney, nearly a mile east of the discovery well drilled by Richardson and Christian-Carpenter Drilling Co. Its location is in Section 5, W.C.R.R. Survey. Walter Goldston, 1 Lenoir Josey, a half mile northwest of the discovery well, cored a sand showing oil at 6,457-65 ft., and is making a drill-stem test. The same sand tested oil and salt water at 6,449-77 ft. in the discovery well, and the hole was carried deeper for lower completion.

J. Newton Rayzor is starting an 8,000-ft. test contracted to Loffland Brothers on the J. A. Robertson tract, Ritson Morris Survey, 4 miles northwest of Seabrook, in Harris County. Rig is being set up. Jack Frazier and associates, 1 Johnson, Whitney Britton Survey, Mount Houston area, Harris County, was drilling below 6,000 ft. late in the week after having passed up a sand showing oil at 3,491-3,509 ft. On a 30-minute drill-stem test of the latter sand, taken with ¼-in. chokes on bottom and top, pressure was 7 lb., and 450 ft. of mud and sand and 1,800 ft. of salt water showing oil and gas was recovered. Bottom-hole pressure was 1,575 ft.

Sheridan Area

Shell Oil Co., Inc., is rigging up for its third test in the Sheridan area of Colorado County, which recently was opened for production in the Wilcox. The new test in the E. L. Obenhaus Survey, No. 2 Plow Realty, is a south offset to No. 1 Goodrich, completed the past week as the second producer for the field. The latter extended production 2,567 ft. west of the discovery, No. 1 Plow Realty. On potential test the recent completion flowed at the rate of 480 bbl. of 35-gravity pipe-line oil daily through ¼-in. choke, with 575 lb. working pressure on tubing and 700 lb. pressure on casing shut in. The well is producing from sand topped at 8,133 ft. with bottom of hole at 8,145 ft.

Salt Dome Oil Corp. has taken over Strake, 1 Winnie Poole, Lizzie area, Wharton County. This wildcat, a Wilcox test, was temporarily abandoned earlier this year at a total depth of 10,116 ft. Although it failed to make a well, it showed some oil and gas when tested through perforated casing at 9,927-52 ft. Salt Dome has rebuilt derrick and now is moving in rig to make additional tests in the Yequa and Cook Mountain formations.

Harrison & Abercrombie are rigging up for their third deep test in the Shepherd area of San Jacinto County. Latest test will be located on Sun fee land, William Hays Survey, about 3 miles south of Shepherd. Contract to Housh & Thompson calls for a depth of 9,000 ft.

Humble Oil & Refining Co.'s 9,000-ft. Wilcox test, No. 17-Y R. B. Woodley, in the Raccoon Bend field, Austin County, is drilling below 5,400 ft., having passed up the regular Jackson and Cockfield producing horizons.

Cotton Lake District

In the Cotton Lake district of Chambers County, Humble, 4-D Lawrence, an extension test, flowed dry gas with some wash water for 8 hours and died. Hole had been washed down to 6,509 ft., total depth, where it was in shale, and screen was set with 5½-in. casing at 6,502 ft. Flowing through ¼-in. positive choke, the well had a pressure of 100 lb., with shut-in casing pressure 400 lb. The well is shut down waiting on orders.

Salt Dome Oil Corp., 2 Ira Williams, Cotton Lake, cored sand with streaks of sandy shale and shale at 6,442-52 ft., where it showed oil and gas.

A 1,200-ft. southwest extension test for the North Cotton Lake field, Chambers County, has been started by Humble Oil & Refining Co. This test, No. 1 E. A. Flewellen, is on a 502.42-acre tract in the Benjamin Winfree Survey. Nearest producer is No. 4 N. F. Howard, at the south edge of the field.

Testing of a deep oil-showing sand encountered by Glenn H. McCarthy, 1 Munson, deep test in the Bailey's Prairie area, Brazoria County, still is being delayed by a fishing job. The test was drilled to a total depth of 11,860 ft. and plugged back to 11,841 ft., and was preparing to test a sand at 11,642-52 ft. when tubing stuck. Tubing now is being cut out.

Alta Loma Field

Stanolind Oil & Gas Co. was trying to kill its No. 1 Hulen, discovery well of the Alta Loma field, Galveston County, over the week end. This well has been producing with drill pipe stuck in the hole since it blew in several months ago with total depth of 9,112 ft. Operators have been unable to close the well in completely and it already has produced more than 320,000 bbl. A relief well 600 ft. away has been drilled and into the drill stem of the first well at a point about 700 ft. off bottom, and which is being shot. Bottom of the relief well is 8,466 ft., and 7-in. casing was cemented at 8,259 ft. Stanolind, 2 Hulen, 1,350 ft. south of the discovery well, is making hole around that depth.

Assignments of more than 800 acres in the Alta Loma area were made to Stanolind Oil & Gas Co. the past week by Gulf Board and Salt Dome Oil Corp. The leases are located about a half mile north of the discovery well. The former owners retain an overriding royalty of an eighth, with Stanolind assuming a 60-day drilling obligation. Leasing and transferring of interests continues active around the Alta Loma area, with one of the largest deals the past week being the taking of 2,070 acres about 2½ miles southwest of the discovery well by Strake Petroleum Co.

Lolita and West Ranch

The Lolita and West Ranch fields of Jackson County, continue the most active spots on the Texas Gulf Coast. The Lolita field, opened within the past couple of months, now has six rigs working, while at West Ranch there are from 13 to 15 rigs busy. At Lolita, Magnolia Petroleum Co. completed No. 1 Mitchell, in the Barnsdall west extension area. This well, on potential, flowed 88 bbl. through an ⅛-in. choke in a 12-hour test with tubing pressure of 825 lb. Casing was perforated at 5,125-31 ft. Magnolia, 1 Four Way Ranch, and Skelly, 1 Mitchell, both in the same area, were in process of completion for additional wells.

The West Ranch field was defined to the southwest by Magnolia, 1 Bennett, an outpost test which found salt water in all regular pay sands. It was abandoned at 6,410 ft.

Jack Frazier and associates has abandoned No. 1 Nona Miles, a much watched wildcat, located about 2 miles southwest of Kountz, Hardin County, in the S. B. Turner Survey. Drilled to a total depth of 8,515 ft., no shows were reported. Titanic Oil Co. has abandoned No. 1 J. E. Goar at Hilje, Wharton County. It tested salt water with casing perforated in sand at 5,228-42 ft.

TEXAS GULF COAST COMPLETIONS

Brazoria County

West Columbia field: Texas, 39 Abrams, perf. casing 3,210-18 ft., 75 bbl., pumping.
Lockridge field: Gulf, 2 Baker, 6,354 ft., 30 bbl., 4 hours, ⅛-in. choke.

Chambers County

Thompson field: Gulf, 14 Wolters, 4,362 ft., 116 bbl., ⅛-in. choke.

Colorado County

Sheridan field: Shell, 1 Goodrich, 8,145 ft., 156 bbl., 8 hours, ¼-in. choke.

Galveston County

Dickinson field: Humble, 9 Fream, 7,977 ft., 3 bbl. dist. per hour, ⅞-in. choke.

Hardin County

Batson field: Ada Belle, 287 Gulf, 407 ft., 34.06 bbl., pumping.
Wildcat: Frazier, 1 Nona Mills, 8,515 ft., dry.

Harris County

Clear Lake field: Humble, 48-C West fee, 5,927 ft., 5 bbl. per hour, ⅛-in. choke.
Humble, 49-C West fee, 5,915 ft., 5 bbl. per hour, ¼-in. choke.
Fairbanks field: Amerada-Stanolind, 24 Foley, perf. casing 6,830-38 ft., 135.87 bbl., ⅛-in. choke.

Jackson County

Lolita field: Magnolia, 1 Mitchell, perf. casing 5,925-31 ft., 88 bbl., 8 hours, ⅛-in. choke.
Barnsdall, 2 Lazarus, 5,930 ft., 220 bbl., ⅛-in. choke.
Humble, 1-B L Ranch, 5,943 ft., 23.43 bbl. per hour, ⅛-in. choke.
Wellington, 3 L Ranch, perf. casing 5,937-41 ft., 268 bbl., 5/32-in. choke.
West Ranch field: Magnolia, 1 Turner, perf. casing 5,759-64 ft., 176 bbl., 8 hours, ¼-in. choke.
Magnolia, 1 Bennett, 6,410 ft., dry.
Magnolia, 44-A West, perf. casing 5,531-47 ft., 143 bbl., ¼-in. choke.
Magnolia, 80-A West, perf. casing 5,542-50 ft., 168 bbl., ¼-in. choke.
Magnolia, 90-A West, perf. casing 5,560-68 ft., 628 bbl., ¼-in. choke.
Magnolia, 93-A West, perf. casing 5,562-70 ft., 168 bbl., ¼-in. choke.
Magnolia, 94-A West, perf. casing 5,574-82 ft., 570 bbl., ¼-in. choke.
Boyle, 1 Bennview, 5,470 ft., 547 bbl., ¼-in. choke.
Texana field: Swiger & Masterson, 1 Robertson, 6,180 ft., 20 bbl. dist., 11/64-in. choke.

Jefferson County

Labelle field: Sun, 1 Folts, 8,641 ft., 68 bbl. dist., 6,501,000 cu. ft. gas, ¼-in. choke.
Lovell's Lake field: Humble, 22 Broussard, 7,803 ft., 150 bbl., ⅛-in. choke.
South China field: Titanic, 1 Fontenot, perf. casing 7,870-74 ft., 75 bbl., 7/64-in. choke.

Liberty County

Hardin field: Humble, 1 Rye, 7,625 ft., 303 bbl., ¼-in. choke.

Matagorda County

Bay City field: Hamman, 3 Richers, 9,302 ft., 60 bbl. dist., 11/64-in. choke.

(Continued on Page 75)

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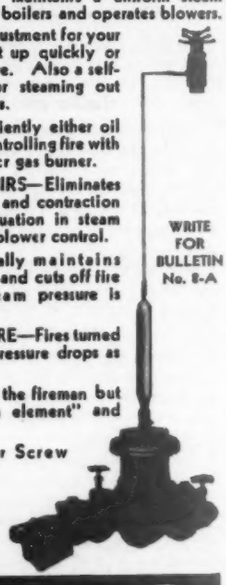

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Neale and Barataria Fields Receive Important Extensions

By NEIL WILLIAMS

NEW ORLEANS, La., July 29.—A major extension for the Neale field, new Wilcox producing field, Beauregard Parish, discovery of a shallower sand and extension in the Barataria field, Jefferson Parish, and starting up of new development in a number of much-watched areas, were among the highlights in coastal Louisiana operations the past week.

In the Neale field, Atlantic, 2-B Rice was completed flowing at the rate of 450 bbl. daily through a ¼-in. choke from Wilcox sand at 8,335-53 ft., with bottom of the hole at 8,411 ft. Five and one-half inch production casing string was cemented at 8,403 ft.

This well is approximately 4,700 ft. west of the discovery well, Atlantic, 1 Whitmer, and about ½ mile northwest of Atlantic, 1 Spiers. The discovery well was completed March 25. All four wells in the field are producing from approximately the same depth.

Atlantic is starting two additional tests in the field, these being No. 12 Whitmer, located 1,320 ft. south of the discovery well, and No. 2 Ira Speirs, 1,320 ft. east of 2-B Rice, just completed. Atlantic, 1 Kay, a north offset to the discovery well, is drilling below 5,000 ft. Frank Bennett has made location for No. 1 Musser-Davis.

The new sand for the Barataria field was found in California, 1 Fleming (Louisiana Truck & Orange Co.). This well, located east of the discovery well, completed last November in an 8,200-ft. horizon, tested the new sand through casing perforations at 7,615-20 ft., and flowed at the rate of 34 bbl. an hour of 36-gravity oil through a ¼-in. choke with working pressure on the tubing at 1,080 lb. The well was drilled to 8,797 ft., and 7-in. casing was cemented at 8,341 ft. Because of offset requirements, operators, however, expect to attempt final completion in one of the deeper sands. In addition to the 8,200 and 7,600-ft. sands production also is being obtained from an 8,700-ft. sand. There are two other active operations in the field, both of which have reached the deeper pay sands and are expected to be completed in them shortly.

Little Chenier Field

Testing of Phillips, 1 Miami Corp., discovery well of the Little Chenier field, southern Cameron Parish, brought in a couple of weeks ago, continued the past week without the well being officially completed. The well, which has been producing from a sand in which casing was perforated at 10,196-10,200 ft., has been flowed under various chokes to determine its potentialities. On a flow through ¼-in. and 5/32-in. chokes in series on the wings, the well made 80 bbl. of straw distillate in 10 hours, with pressure of 3,770 lb. on tubing.

Union Oil Co. of California has made location and is rigging up for its second test in the lately opened Schooner Bayou field (White Lake area), Vermilion Parish. The location, No. 4 Louisiana Fur, Inc., is 1,980 ft. south of the north line and 660 ft. east of the west line of Section 15-15s-1e, which places it about 7,250 ft. northeast of the discovery well, officially completed only a couple of weeks ago. The first three locations on this tract, two of which were drilled, were those of Louisiana Land & Exploration Co., from which company Union Oil Co. acquired the block. This accounts for Union's first test on the tract bearing the number 4. The discovery well has been shut in because of lack of outlet for the production. On potential test it flowed at the rate of 220 bbl. of 36-gravity oil and 1,450,000 cu. ft. of gas per day through a ¼-in. choke, gaging 3,575 lb. working pressure on the tubing. Production was from sand in which casing was perforated at 10,536-42 ft. Hole had been drilled to 11,098 ft.

North Elton Field

Bel Oil Corp.'s second well for the North Elton field, Allen Parish, was completed the past week flowing 50 bbl. of distillate with 1,500,000 cu. ft. of gas daily through a 12/64-in. choke. Casing was perforated in sand at 7,573-77 ft. after hole had been drilled to 7,654 ft. A bottom pressure of 3,250 lb. was recorded. The well is a southwest offset to the discovery well, also a distillate-gas well. The rig has been moved out by the drilling contractors, leaving the field without an active operation.

Providing outlet for the gas, a 6-in. welded line is being laid from the field to Elizabeth, about 20 miles, where fuel will be supplied mills of the Industrial Lumber Co.

Humble Oil & Refining Co. completed a good well in the North Crowley field, Acadia Parish, in its No. 3 Thevis. With casing perforated in sand at 8,788-95 ft., the well, on potential test, flowed at the rate of 634 bbl. of 35.2-gravity oil daily through a ¼-in. choke, tubing pressure 1,275 lb. and casing pressure 1,425 lb.

Offsetting this well to the north, Vincent & Welsh, on a Sun Oil Co. farmout, are rigging up for No. 1 Harman, Section 34-8s-1e. In the same field, Humble has made location for two additional tests, No. 3 Reiners, Section 46, northwest of No. 2 Reiners, recently completed as a north extension, and No. 9 Williams, Section 34, in the Thevis well area.

Calcasieu Lake

Superior Oil Co. is drilling ahead in its No. 3 State-Calcasieu Lake, Cameron Parish. At late report this wildcat, on the west side of the Calcasieu Lake dome, was drilling below 10,200 ft. No. shows have been reported since tests at 8,500 ft. and 9,500 ft.

Sun Oil Co. opened a new sand at Chacahoula, La Fourche Parish, with the completion of its No. 8 Dilbert-Stark-Brown, located on the northeast flank. The sand, at 6,320-45 ft., is shallower than previously productive sands. On potential the well flowed 6.76 bbl. per hour through a 10/64-in. choke with 625 lb. pressure on tubing and casing.

At Bayou Blue, Iberville Parish, Superior Oil Co. is trying to sidetrack stuck drill pipe in its No. 1 E. B. Schwing. Bottom of hole is 9,733 ft. This well is southwest of the discovery producer on that flank. Superior, 3 Schwing, northwest of the discovery well, is drilling below 2,300 ft.

Erath Field

Humble Oil & Refining Co. has entered the Erath area, Vermilion Parish, with a test now drilling below 4,500 ft. This test, No. 1 School Board, Section 16-13s-4e, is located ½ mile west of the discovery well drilled by the Texas Co. Dry holes already have been drilled to the north, east, and south of the discovery well, which so far is the only producer. In this area Phillips Petroleum Co. has leased from Rosehill Irrigation Co. the beds of the latter company's canals in Township 13s-4e, paying a reported bonus of $15,000.

At East Hackberry, Cameron Parish, Harrison & Abercrombie are following up the recent abandonment of their No. 2 Elwood Verdine with the starting of No. 3, which is located 1,565 ft. south and 437 ft. west of the southeast corner of Section 13, in Section 36-12s-10w. No. 2 was quit at 7,818 ft. as dry, but it had a sand at 6,905-35 ft. that showed some oil and gas, and which will be thoroughly tested by the new well.

The first test for the Rabbitt Island prospect in St. Mary Parish is being started by the Texas Co. Location for the test, No. 1 State-Rabbitt Island, is in the bay, in Township 18s-8e. The location is described as being 580 ft. south and 2,780 ft. west of the northeast corner of the township on Rabbitt Island to Triangulation Station, thence 29,819 ft. south, 2° 5" 11' east, thence 2,500 ft. south.

LOUISIANA GULF COAST COMPLETIONS

Acadia Parish

Jennings field: Imperial, 2-A Jennings-Heywood, 1,751 ft., 50 bbl. net, pumping.

(Continued on Page 80)

Deep Northeast Wyoming Test Abandoned in Deadwood Sand

By T. R. INGRAM

DENVER, Colo., July 29.—Best completion of the week in the Rocky Mountain area was the Argo Oil, 13-A Elliott, in Lance Creek, which flowed 120 bbl. an hour from four benches of the Leo formation. Union Oil Co. of California's wildcat on Bull Creek was abandoned after testing the Deadwood. Bruce C. Teeters' wildcat in the Dewey district, failed to find commercial production in the Sundance and was abandoned.

Cut Bank in Montana had one completion, an 11,300,000-cu. ft. gas well in Glacier Production, 1 Coburn unit. Kevin-Sunburst had four completions, one of which was a dry hole. An exceptional well was Nepstad-Montgomery-Fargher, 3 Haugen-1, which flowed 30 bbl. an hour. Texas, 13 Bruin made 82 bbl. and Black Label, 11 State made 85 bbl.

New operations include one for General Petroleum Corp. on Cole Creek; one for the Ohio Oil Co. in Lance Creek; one in La Barge and one in Osage in Wyoming, two in Kevin-Sunburst in Montana, and two in McKinley County, New Mexico.

COLORADO

The U. S. Circuit Court of Appeals denied a petition of the Colorado Interstate Gas Co., the Canadian River Gas Co., and the Colorado-Wyoming Gas Co. for a rehearing on their application for an order restraining the Federal Power Commission from proceeding with its investigation of the financial and physical setup of their properties which supply parts of Colorado and Wyoming with natural gas from Texas. This action was taken in Denver on July 24.

The Power Commission issued an order March 14, 1939, for the investigation of the properties under the provisions of the natural gas act. Prior thereto the city of Denver had appealed to the commission for relief under the consumer rates of the Public Service Co. of Colorado. The company took the position this relief could not be afforded due to the rates charged under contract for gas at the city's gates. The commission then was requested to determine the reasonableness of the gate rates. The Colorado Interstate and affiliated companies took the matter into court on the ground of lack of jurisdiction by the Power Commission. The Circuit Court of Appeals ruled on March 5, 1940, that the case was not reviewable at that time as the order was merely one of investigation and did not require the companies to do or refrain from doing any particular or specific act. The decision this week on the petition for a rehearing conformed to that originally handed down. In the meantime the investigation by the commission has been under way for more than a year.

El Paso County

F. F. Hintze, 1 State ..... CEL SE SE 16-11s-60w
Cmtg. caves at 1,600 ft.; 8¼-in. at 1,550 ft. not cmtd.

Larimer County

C. D. Cunningham et al 2, State-Warren ..... CWL SE NW 6-11n-68w
Drlg. below 100 ft.
Continental, 2 Larson ..... SE NW SW 19-8n-68w
Drlg. sh. 4,660 ft.

Moffat County

Texas, 2 Wick ..... Lot 9, 10-4n-91w
T.D. 3,935 ft.; milling on junk.
Mountain Fuel Supply, 2-A Kuykendall ..... SW NW NW 23-12n-100w
T.D. 2,600 ft.; cmtd. 6¼-in. at 2,596 ft.; prep. to perf. and test.
Mountain Fuel Supply, 6 Wilson C Lot 2, 14-12n-100w
Rig; W.O. tools from No. 2 Kuykendall.

Park County

South Park Oil, 1 Lemar ..... NE NE SE 34-11s-75w
Drlg. 7,381 ft.

Rio Blanco County

Buford Oil, 1 Government ..... SW SW 16-1n-91w
T.D. 4,160 ft.; S.R. at 3,885 ft.
Texas-California, 4 Unit ..... NW NW NW 2-2n-94w
Drlg. 727 ft.

WYOMING

Crook County

The Union Oil Co. of California, 1 Bull Creek, SE NE NW 3-57n-62w, was plugged and abandoned at 4,232 ft. It may have reached the pre-Cambrian rock, but if not, the Deadwood, of Cambrian age, was penetrated 100 ft. or more. It was drilled on Ohio Oil Co. acreage.

Vickers Pet.-Continental Oil, 1 Duncan-Lobban .... NE NW SW 28-57n-64w
Spd. July 16.

Albany County

Ohio, 1 Coughlin ..... SW NE NW 26-16n-77w
T.D. 4,345 ft.; tstg. Muddy sd. at 3,750-65 ft.

Big Horn County

Ohio, 3 Davis ..... NW SW NW 34-56n-97w
Drlg. 3,584 ft.

Carbon County

Sinclair-Wyoming, 14 Unit ..... NW SW NE 7-26n-89w
Drlg. in Tensleep at 5,832 ft.

Fremont County

Sinclair-Wyoming, 2-A Muskrat NW SE SW 34-34n-92w
Drlg. below 2,000 ft.; cmtd. 13⅜-in. at 904 ft.

Natrona County

General Petroleum Corp. is rigging up for its No. 71-21-G, NE NE NE 21-35n-77w, Cole Creek, 1,980 ft. east of No. 51-21-G, which is being completed in the Shannon sand. This is the fourth well to be drilled in an east-west line across the structure for production in the Shannon and at the same time work out the geology for lower sands. The company also has gone back into its No. 1 Government, the discovery well, ½ mile to the south and plugged back from the Dakota-Lakota at 8,015 ft., total depth, to test the Shannon and is rigging up pumping equipment.

General Pet., 71-21-G ..... NE NE NE 21-35n-77w
R.U.R.; (first report).
Stanolind, 8 Unit ..... NW NE 26-40n-79w
Drlg. 2,255 ft.
General, 51-21-G ..... NW NW NE 21-35n-77w
T.D. 4,535 ft.; T. Shannon sd. 4,492 ft.; cmtd. 7-in. at 4,487 ft.; R.U. for pmpg. test.
Lewis Gebhart, 1 Government, NW NE SE 10-39n-78w
T.D. 1,379 ft.; running 10-in.

Niobrara County

Lance Creek had an excellent completion in Argo Oil, 13-A Elliott, SE NE NW 5-35n-65w, an inside well, which flowed 120 bbl. an hour at 5,490 ft., total depth, from four benches of the Leo horizon. Top of the Leo was at 5,012 ft.

A. B. Cobb and the Yale Petroleum Corp. have abandoned their plans for a pipe line from Lance Creek to Newcastle following the granting of a permit by the state Public Utilities Commission to J. S. Ward to build a line along the same general route.

The Ohio Oil Co. is rigging up for a diagonal offset on the northeast to the Argo, 13-A Elliott, in its No. 17 Elizabeth Lamb-Account 1.

Ohio Oil, 17 Lamb-1 ..... NW NW NE 5-35n-65w
R.U.R.; (first report).
Continental, 12 Rohliff ..... SW NW SW 32-36n-65w
Rig; W.O. equipment.
Continental, 6 Apex O.P.C.-3 .... SE NE NE 34-36n-65w
Rig; W.O. equipment.
Minnelusa-MacKinnie, 6 Thompson ..... NE NW SE 7-35n-65w
Reported showing 50 per cent water in Leo in new hole; depth not given.
Continental, 8 Joss ..... SW NW NE 6-35n-65w
Drlg. 2,050 ft.
Ohio, 15 Lamb, Acct. 1 ..... NW SE SE 32-36n-65w
T.D. 5,310 ft.; cmtd. 7-in. at 5,305 ft.; prep. to perf.
Continental, 19 Tom Bell ... NW NE SE 33-36n-65w
T.D. 5,325 ft.; prep. to acd.
Ohio, 16 Lamb-1 ..... NW NE NE 5-35n-65w
T.D. 5,628 ft.; P.B. to 5,480 ft.; W.O.C.
Ohio, 16 Putnam ..... SW SW NW 4-35n-65w
T.D. 5,529 ft.; P.B. to 5,457 ft.; tstd. will P.B. again.
H. D. Moore, 1 Berggren ..... SE NW 23-35n-63w
Shut down at 2,676 ft.
Ohio, 7 Rohliff ..... NW NE SE 32-36n-65w
Drlg. 5,255 ft.; T. Leo 5,098 ft.
Continental, 7-A Dielman .... NW NE NW 8-35n-65w
Drlg. in sd. at 5,382 ft.; cmtd. 7-in. at 5,366 ft.

Park County

V. M. Kirk, 3 Government .. NW NW SW 24-58n-98w
Drlg. 1,758 ft.
Yale Pet., 1-B Frisby ..... SW NE NE 31-52n-100w
Drlg. 2,264 ft.
Kinney-Coastal, 4 Government .... SE NW 13-56n-98w
Spdg. 100 ft.
Resolute, 2 State ..... SW SW 16-57n-101w
Drlg. at 9,363 ft.

Sublette County

Texas, 1-H ..... CWL NW SW 27-27n-113w
Coring 1,005 ft.
North La Barge Oil, 4 Govt. CSL SE NE 28-27n-113w
T.D. 1,177 ft.; tstg. S.O., 50 per cent water.
Worth Garretson et al, 1 ..... NE NW SE 28-27n-113w
T.D. 1,470 ft.; running rods and tubing.
Marvel Oil, 4 Government .... SE NE SE 28-27n-113w
Location; (first report).
North La Barge Oil, 1 Govt. .. NE SE NE 28-27n-113w
Drlg. 1,080 ft.

Sweetwater County

Union Gas, 1 Hummer ..... NW NW NE 6-17n-103w
Drlg. 1,620 ft.
Mountain Fuel Supply 1 Murphy SE SE SE 27-17n-104w
Shut down at 4,156 ft.
Sinclair-Wyoming, 94-A ..... NW NW NE 10-26n-90w
Drlg. 1,641 ft.
Gus Pongratz et al, 1 Clark .... NW NE 22-19n-104w
Drlg. 3,035 ft.; T. Frontier 2,626 ft.
Red Desert Corp., 1 Aspden .. NW SW NW 34-18n-103w
Cmtd. surf. csg. at 306 ft.; W.O.C.
Vermillion Oil, 2 Government .. SW SW SW 7-12n-99w
Shut down 3,002 ft.

Weston County

Bruce C. Teeters, 1 State, C SW NE 36-42n-61w, deep test in the Dewey district, was abandoned at 2,372 ft., total depth, after plugging back and testing the Sundance at 980-1,017 ft., which had a show of oil on the way down, but proved noncommercial on test.

One new operation is Riggs, 4 Government, Osage field, which will go to the Sundance with cable tools.

Riggs Oil, 4 Government ..... CNL NE SE 16-46n-64w
M.I.M.; (first report).
Charles Stough, 12 ..... CWL SW NW 4-46n-63w
T.D. 150 ft.; trying to free casing.
Pierre La Fleishe, 1 Dober ..... NE NE NE 21-45n-63w
Drlg. below 150 ft.
John Brorphy, 1 Hansen ..... NW NE NW 13-44n-63w
Drlg. below 500 ft.
Wheedon Oil, 6 State ..... CSL NW NE 16-46n-63w
Drlg. at 150 ft.

MONTANA

Carbon County

Continental, 1 Prigge ..... SE SE SE 33-9s-25e
Drlg. 864 ft.
R. C. Tarrant, 2 McKay ..... SE NW 4-6s-18e
Shut down at 3,057 ft.; W.O. rotary.

Glacier County

Cut Bank had one completion, a gas well for the Glacier Production Co. in its No. 1 Coburn unit, CSL NW NE 9-33n-5w, which gaged 11,300,000 cu. ft. of gas at 2,808 ft., total depth, from the Cut Bank sand at 2,774-2,806 ft. First gas was at 2,782 ft. and main pay at 2,782-2,800 ft.

A. R. Pardue, 4 Tribal-171 ..... SE SE SE 7-32n-5w
Drlg. 2,270 ft.
Glacier Prod., 1 Dahlquist unit ..... C 12-34n-5w
T.D. 2,475 ft.; fsg.
Glacier Prod., 3 Hall ..... NW SE 35-36n-6w
Cmtd. 10¾-in. at 699 ft.
Texas, 7 Hinkle ..... NE NW NE 2-34n-6w
Drlg. 1,516 ft.
Texas, 3 Bonnett ..... NE SE 8-32n-5w
R.U.
Texas, 6 State ..... NW SW 16-32n-5w
Drlg. 1,980 ft.
Texas, 3 Unit 11 ..... W½ NW SW 11-35n-6w
T.D. 2,590 ft.; fsg.
A. B. Cobb, 1 Teterud ..... NE NE NE 24-37n-5w
Drlg. 2,245 ft.
Santa Rita O. & G., 11 Tribal ..... NE cor. 16-35n-6w
Drlg. 2,835 ft.
Steele Creek Prod., 3 Carmen .... SE SE NW 19-34n-5w
Drlg. 2,450 ft.
Montana Headlight Oil 6 Britton NW SW SE 11-34n-6w
Drlg. 2,665 ft.
R. C. Tarrant, 3 Hope ..... NE 18-34n-5w
R.U.
R. C. Tarrant, 1 Butler ..... CEL NW SE 15-34n-6w
T.D. 2,987 ft.; moving off; 800 ft. O.I.H.
Cobb-Reagan, 4 Jackson ..... SW SW SE 5-32n-6w
R.U.R.

Stillwater County

Texas, 1 Unit ..... SE NW 10-4s-19e
R.U.R.

Toole County

Kevin-Sunburst had four completions, including one dry hole, and two new operations.

The best well was Nepstad-Montgomery-Fargher, 3 Haugen-1, SW SW SE 2-35n-3w, on the west side of the field, which flowed 30 bbl. an hour at 1,852 ft., total depth, from the Ellis at 1,845-50 ft. after acidizing with 500 gal.

Texas, 13 Bruin, CWL SE 9-35n-2w, pumped 82 bbl. the first 24 hours at 1,620 ft., total depth, from the contact at 1,615-20 ft., after acidizing with 500 gal.

Superior Petroleum, 13 Aronow, SE NW SW 12-35n-3w, was dry and abandoned at 1,820 ft.

Black Label Oil, 11 State, NE NW NE 16-35n-2w, was acidized with 1,000 gal in the contact at 1,606-08 ft., and made 85 bbl. a day.

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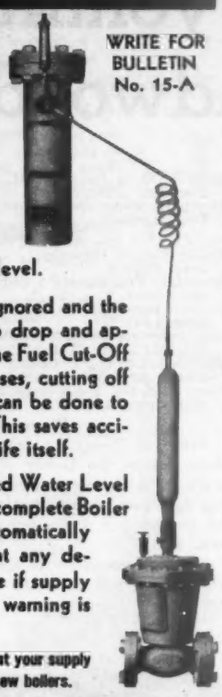
WRITE FOR BULLETIN No. 15-A



1. The Lowater Alarm automatically sounds a shrill whistle, calling the fireman when the water level falls to the alarm level.

2. If this warning is ignored and the water level continues to drop and approach a danger point, the Fuel Cut-Off Valve automatically closes, cutting off the fire before damage can be done to boiler or equipment. This saves accident costs and perhaps life itself.

Also available with Feed Water Level Control Valve making a complete Boiler Safety Unit which automatically maintains boiler water at any desired level, blows whistle if supply fails and cuts off fuel if warning is ignored.

INSIST on INFERNO equipment at your supply store—SPECIFY it on your new boilers.

THE INFERNO CO.
SHREVEPORT, LA.
P. O. Box 1138 115 Ricou Street

HOTEL **Mayfair** ST. LOUIS
ALL ROOMS AIR-CONDITIONED $3.50 UP

NEW MAP OF THE EASTERN AREA

SHOWS:—Oil fields in green, gas fields in red, new discoveries 1937-1940 in yellow. State indexes giving official field names and location on maps. Small inset of United States showing favorable and unfavorable areas for oil. Townships, Ranges, Counties and County Seats. Above sketch shows area covered by map.

Size: 54" x 60" Scale: 1" = 16 miles.

PRICES:—Paper $25.00. Linen $27.50.
Linen Map in dark green steel case. 3" diameter x 65" long, $37.50.

E. C. JACOBSON, MAPS
801 McBirney Bldg., Tulsa, Oklahoma

Twin Fields Oil, 2 Govt. ..... SE SE SW 21-35n-3w
Drlg. 750 ft.; (first report).
Pacific National, 9 Govt. ..... NE SE SE 8-35n-2w
Drlg. 129 ft.; (first report).
Enfield, 3 Zachor ..... C NW NW 20-35n-1w
Drlg. 600 ft.
Big West Oil, 17 Dalhousie ... SE NW NE 28-35n-3w
Drlg. 1,250 ft.
Coolidge & Coolidge, 2 Midland Realty ..... NW SE SW 25-36n-2w
Drlg. 1,600 ft.
Silver Oils, 3 Haskins ..... NE SW SW 25-36n-2w
Drlg. 1,591 ft.; S.O. in Sunburst at 1,591 ft.
Lion Oil, 5 Haugen ..... NW SE SE 11-35n-3w
Drlg. 1,610 ft.; cmtd. 8⅝-in. at 1,550 ft.
A. E. Crumley & Son, 20 Fryberger ..... SW SW NE 24-35n-3w
Drlg. 530 ft.
Coolidge & Coolidge, 8-A State NW SE NW 36-36n-2w
R.U.
Texas Pacific C. & O., 11 Howling SE SE NE 9-35n-2w
Drlg. 1,658 ft.; contact at 1,643 ft.; dry.
Morton O. & R., 9 Morton ..... NW NW SE 13-34n-2w
T.D. 1,140 ft.; fsg.
Twin Falls Oil, 1-A Govt. .... NW NW NW 28-35n-3w
Shut down 1,732 ft.
Wm. Hanlon et al, 1 Merton Mortgage SW SE 6-37n-1w
T.D. 2,160 ft.; U.R. 7-in.
Prevol & Shay, 1 Govt. ..... NE NW SW 11-35n-3w
Drlg. 850 ft.

NORTHWEST NEW MEXICO

McKinley County

Teague, Greer, 1 Santa Fe 33-18n-10w
S.D. 920 ft., for csg.
Petroleum Producers, 8 State ..... SE SW 36-18n-9w
T.D. 1,578 ft.; tstg.
Petroleum Producers, 9 Hospah .. NW NW SE 1-17n-9w
Spdg.; (first rejort).
Petroleum Producers, 10 Hospah CEL SE SW 36-18n-9w
Building derrick; (first report).

San Juan County

Continental, 108 Rattlesnake ... C NE NE 11-29n-19w
Shut down 620 ft.
Claude Carroll, 1 Cornell ..... SW NE 11-29n-12w
Drlg. 1,010 ft.
Kutz, 1 Government ..... NW NW 28-28n-10w
Drlg. at 1,500 ft.

San Miguel County

Southwest Drlg., 1 Conchas ..... NW NE 34-17n-21e
Drlg. at 2,350 ft. after recmtg. for water shutoff.

UTAH

Box Elder County

Utah Dutchess, 1 ..... NW cor. 26-14n-8w
Drlg. 400 ft.

Daggett County

Mountain Fuel Supply, 5 Murphy SW NE SW 15-3n-24e
Drlg. 1,603 ft.

Grand County

Reeder Corp., 1 State ..... NE NE NE 16-22s-19e
T.D. 1,060 ft.; fsg.

Summit County

Longwell Pet., 1 ..... SE SW SE 35-3n-5e
T.D. 3,300 ft. in sd.; U.R. 4¾-in. to bttm.

Illinois Fields

(Continued from Page 56)

Sun, 9 E. R. Greathouse ..... NE SE SW 33-4s-14w
Flowed 540 bbl., 5,000 gal. acid, McClosky 2,899-2,903 ft., T.D. 2,906 ft.
Sun, 8 E. R. Greathouse ..... SW SE SE 33-4s-14w
Pumped 200 bbl., acid 8,000 gal., McClosky pay 2,883-85 ft., T.D. 2,892 ft., saturation also Tar Springs sand 2,177-2,223 ft., Aux Vases 2,810-43 ft., Waltersburg topped at 2,114 ft., Cypress at 2,525 ft., Benoist 2,663 ft.
Pure, 1 Calvin A ..... SW SE NW 9-4s-14w
Pumped 131 bbl., Tar Springs 2,187 ft., perforated 2,210-18 ft., casing at 2,703 ft., T.D. 2,720 ft., shows in Cypress at 2,565 ft., Paint Creek 2,627 ft., and Benoist 2,705-18 ft.
Fortner et al, 1 E. Potter ..... NE NE SE 8-4s-14w
Pumped 80 bbl., 10-qt. shot, Benoist 2,680-96 ft., T.D. 2,740 ft.
Bowers et al, 2 Storms ..... NW SE NE 22-6s-9e
Flowed 115 bbl. in 13 hours, 40-qt. shot, Waltersburg 2,220-62 ft.

Clinton County

Paul Mosebach, 7 A. Suhl ..... NE SW NE 7-1n-3w
Dry, Devonian 2,522 ft., T.D. 2,533 ft.
Matches, 1 George Nettemeyer ..... SE NW 12-1n-5w
Dry, Aux Vases 980 ft., T.D. 1,033 ft.

Clinton County—Centralia Field

Union Production, 1 Cox ..... SE NE SW 34-2n-1w
Dry, Devonian 2,917 ft., pay zone 2,956 ft., T.D. 2,968 ft.
Lee, 1 Hoffman ..... SW NE NE 35-2n-1w
Flowed 51 bbl., Devonian pay 2,910-12 ft.
Lee, 3 Hoffman ..... E½ NW NE 35-2n-1w
Pumped 79 bbl. oil with 16 per cent water, Devonian pay 2,914-15 ft.
Morgan, 1 Allison ..... NE SW SW 35-2n-1w
Flowed 1,644 bbl., acid 5,000 gal., Devonian pay 2,903-16 ft.
Morgan, 2 Allison ..... SE SW SW 35-2n-1w
Flowed 2,246 bbl., acid 5,000 gal., Devonian pay 2,903-12 ft.
DeMayo et al, 1 Carson .... W½ SW NW 36-2n-1w
Pumped 200 bbl. oil and 400 bbl. water, acid 3,000 gal., pay 2,921-31 ft.
Smokey Oil, 1 Ellerman ..... W½ NE SW 36-2n-1w
Dry, drill-stem test 60 ft. oil and mud and 150 ft. water, Devonian pay zone 2,919-26 ft.
Tuesday, 8 Buehler ..... E½ NW SE 36-3n-1w
Pumped 225 bbl. oil and 620 bbl. water, acid 5,000 gal., Devonian pay 2,920-23 ft.
Ring & McLain, 6 Hansemann .. SE NW SE 1-1n-1w
Swabbed and flowed 252 bbl., Devonian pay 2,916-22 ft.
Williams, 2 Dunn ..... NW NW NE 1-1n-1w
Pumped 118 bbl. oil and 6 bbl. water, shot 20 qt., Benoist 1,329-45 ft., T.D. 1,348 ft.
Chicago Syndicate, 2 Illinois Cen. R. R. ..... SE SW SE 23-1s-1w
Dry, Benoist 1,584 ft., T.D. 1,598 ft.
Shell, 2 Brown ..... NW NE SW 23-1s-1w
Pumped 285 bbl. oil and 20 bbl. water, 20-qt. shot, Benoist 1,540-50 ft.
Gulf, 2 Ellerman-Buehler ..... E½ SE SW 36-2n-1w
Flowed 389 bbl. oil and 3 bbl. water, T.D. 2,923 ft.
Gulf, 2 Stanton ..... NE NE NW 26-1s-1w
Pumped 65 bbl. oil and 3 bbl. water. T.D. 1,565 ft.

Salem Field

The following wells were deepened or plugged back. All the work was done with cable tools.

Texas, 5 D. Buckley ..... NW NW SE 33-2n-2e
Deepened from 1,900-11 ft., 100-qt. shot, pumped 92 bbl.
Texas, 1 T. Easley ..... SE SE NW 33-2n-2e
Deepened from 1,883 to 1,911 ft., 120-qt. shot, pumped 300 bbl.
Texas, 11 K. Wayman ..... NE NW NE 31-2n-2e
Deepened from 1,767 to 1,834 ft., 100-qt. shot, flowed 150 bbl. in 22 hours.
Texas, 8-A Chapman ..... NW NE SW 28-2n-2e
Deepened from 1,817 to 1,844 ft., pumped 20 bbl. in 19 hours.
Texas, 1 Maxwell ..... SW NE NE 32-2n-2e
Deepened from 1,788 to 1,858 ft., pumped 196 bbl.
Texas, 1 McCollum ..... SE NW NE 32-2n-2e
Deepened from 1,772 to 1,845 ft., pumped and flowed 280 bbl.
Texas, 6 Stroup ..... SE SW SE 30-2n-2e
T.D. 1,843 ft., 95-qt. shot, flowed 160 bbl.
Texas, 7 D. Young ..... SW SE NW 21-2n-2e
Deepened from 1,849 to 1,878 ft., 45-qt. shot, pumped 64 bbl.
Texas, 1 C. Lee ..... NE SW SE 33-2n-2e
Deepened from 1,885 to 1,896 ft., 10-qt. shot, pumped 65 bbl.
Texas, 1 Parker ..... SW SE NE 33-2n-2e
Plugged back from 1,918 to 1,913 ft., 20-qt. shot, pumped 84 bbl.
Texas, 1 D. Buckley ..... NW NW SE 33-2n-2e
Deepened from 1,878 to 1,902 ft., 90-qt. shot, pumped 80 bbl.
Texas, 15 E. Jett ..... SE SW SW 16-2n-2e
Deepened from 1,845 to 1,885 ft., 50-qt. shot, pumped 30 bbl. in 7 hours.
Texas, 10 Williams ..... SE NW SW 32-2n-2e
Deepened from 1,730 to 1,800 ft., 100-qt. shot, flowed 150 bbl.
Texas, 7 Richardson ..... SW NE SW 32-2n-2e
Deepened from 1,749 to 1,818 ft., 100-qt. shot, flowed 125 bbl.
Texas, 5 L. Dunning ..... SW SE SE 30-2n-2e
Deepened from 1,767 to 1,839 ft., 95-qt. shot, flowed 125 bbl.
Texas, 7 E. Jett ..... NW SE SW 16-2n-2e
Deepened from 1,843 to 1,883 ft., 55-qt. shot, pumped 40 bbl.
Texas, 3 McConnoughday A ..... NW SE SE 32-2n-2e
Deepened from 1,821 to 1,885 ft., 90-qt. shot, flowed 329 bbl.
Texas, 5 E. Jett ..... SW SE SW 16-2n-2e
Deepened from 1,857 to 1,874 ft., 45-qt. shot, pumped 48 bbl.
Texas, 5 W. Sands ..... SW NW SW 33-2n-2e
Deepened from 1,852 to 1,893 ft., flowed 250 bbl.
Texas, 7 Sweney ..... SE NE NW 20-2n-2e
T.D. 3,458 ft., 5,000 gal. acid, flowed 784 bbl.
Texas, 3 D. Buckley ..... NE NW SE 33-2n-2e
Deepened from 1,914 to 1,922 ft., 35-qt. shot, pumped 120 bbl.
Texas, 1 E. Farthing ..... SE NE SE 33-2n-2e
Deepened from 1,925 to 1,926 ft., 10-qt. shot, pumped 57 bbl. in 19 hours.
Texas, 2 E. Farthing ..... NW SE SE 33-2n-2e
Deepened from 1,900 to 1,914 ft., 25-qt. shot, pumped 125 bbl.
Texas, 4 E. Farthing ..... NE SE SE 33-2n-2e
Deepened from 1,930 to 1,941 ft., 10-qt. shot, pumped 100 bbl.
Texas, 3 S. Parker ..... SE SE NE 33-2n-2e
Deepened from 1,900 to 1,905 ft., 20-qt. shot, pumped 98 bbl.
Texas, 6 Easley ..... NW SW NE 33-2n-2e
Deepened from 1,880 to 1,897 ft., 30-qt. shot, pumped 30 bbl.
Texas, 5 D. Buckley ..... NW NW SE 33-2n-2e
Deepened from 1,885 to 1,900 ft., 30-qt. shot, pumped 80 bbl.
Texas, 13 N. Young ..... SW SE NE 20-2n-2e
Deepened from 2,026 to 2,240 ft., 3,000 gal. acid, pumped 61 bbl., St. Louis lime.
Texas, 7 F. Miller ..... SE NE SE 32-2n-2e
Deepened from 1,834 to 1,885 ft., 85-qt. shot, pumped 15 bbl.
Texas, 11 Stonecipher ..... NE SE SW 32-2n-2e
Deepened from 1,757 to 1,820 ft., 90-qt. shot, flowed 250 bbl.
Texas, 7 E. Farthing ..... SW NW SE 32-2n-2e
Deepened from 1,777 to 1,863 ft., flowed 408 bbl.
Texas, 3 F. Lazaretti ..... NW SW SW 33-2n-2e
Deepened from 1,841 to 1,880 ft., flowed 275 bbl.
Texas, 1 F. Lazaretti ..... SW SW SW 33-2n-2e
Deepened from 1,859 to 1,878 ft., pumped 480 bbl.
Texas, 2 F. Lazaretti ..... NE SW SW 33-2n-2e
Deepened from 1,840 to 1,868 ft., pumped 84 bbl.
Texas, 6 Richardson ..... SE SW NW 32-2n-2e
Deepened from 1,703 to 1,782 ft., 110-qt. shot, flowed 245 bbl.
Texas, 3 T. Easley ..... SW SW NE 33-2n-2e
Deepened from 1,898 to 1,910 ft., 80-qt. shot, pumped 85 bbl.
Texas, 4 O. Hopkins ..... NE NW SW 32-2n-2e
Deepened from 1,709 to 1,783 ft., 115-qt. shot, flowed 120 bbl.
Cumberland Prod., 2 Mac Roberts SW SE NE 32-2n-2e
Deepened from 1,773 to 1,852 ft., 100-qt. shot, pumped 50 bbl. in 6 hours.
Salem field—Township 1n-2e
Texas, 1 B. Hawkins ..... NE NE NW 8-1n-2e
Deepened from 1,787 to 1,870 ft., 50-qt. shot, pumped 140 bbl.
Texas, 8 City of Centralia ..... NW NE NW 9-1n-2e
Deepened from 2,075 to 2,089 ft., 2,000 gal. acid, pumped 144 bbl.
Texas, 1 Bell ..... NE NW NW 7-1n-2e
Deepened from 1,858 to 1,868 ft., 7-qt. shot, pumped 56 bbl.
Texas, 6 Richardson B ..... NE NW SW 4-1n-2e
Deepened from 1,846 to 1,868 ft., 40-qt. shot, flowed 75 bbl. in 3 hours.
Texas, 16 City of Centralia ..... SW NE NW 9-1n-2e
Plugged back from 1,878 to 1,868 ft., pumped 119 bbl.

Texas, 2 R. Craig .....NE SW SW 9-1n-2e
Deepened from 1,904 to 1,906 ft., 10-qt. shot, pumped 91 bbl.
Texas, 1 G. Seibel .....NW NE SW 9-1n-2e
Deepened from 1,880 to 1,892 ft., 15-qt. shot, pumped 60 bbl.
Texas, 2 B. Hawkins .....NE NE NW 8-1n-2e
Deepened from 1,864 to 1,867 ft., pumped 147 bbl.
Texas, 6 Foster .....NE NW SW 8-1n-2e
Deepened from 2,101 to 2,171 ft., 3,000 gal acid, pumped 80 bbl.
Texas, 3 Johnson .....SW SE NE 7-1n-2e
Deepened from 1,976 to 2,041 ft., 3,000 gal. acid, 2,745 bbl., McClosky.
Texas, 4 W. Carr A .....SE SW NW 8-1n-2e
Deepened from 1,993 to 2,053 ft., 3,000 gal. acid, 840 bbl.
Texas, 1 R. Craig .....SE SW SW 9-1n-2e
Plugged back from 1,938 to 1,919 ft., 10-qt. shot, pumped 20 bbl.
Texas, 3 R. Fyke .....NW SE SW 8-1n-2e
Deepened from 1,854 to 1,893 ft., pumped 114 bbl.
Texas, 5 V. L. Foster .....N½ NE SE 7-1n-2e
Deepened from 2,004 to 2,071 ft., 3,000 gal. acid, pumped 80 bbl.
Tatum, 5 English .....S½ NE SE 7-1n-2e
Deepened from 2,025 to 2,043 ft., 2,000 gal. acid, flowed 671 bbl. in 6 hours.
Tatum, 6 English .....S½ NW SW 8-1n-2e
Deepened from 2,034 to 2,103 ft., 3,000 gal. acid. pumped 70 bbl.

DRILLING WELLS

Bond County

Natl. Pet., 1 Spindler ..... NW NW NW 10-6n-2w
T.D. 2,454 ft., P.B. 2,275 ft., drilled out to 2,302 ft., swabbed dry, no fill-up overnight, pulled casing. plugged back to 1,002 ft., setting 7-in. casing to test Benoist.
W. F. Lacey, 1 Cartwell..... NW NE SE 20-5n-2w
Fredonia 1,317 ft., St. Louis 1,400 ft.
Poland et al, 1 Marrow.....SW SE SE 7-5n-1w
Coring 1,590 ft.

Clark County

Allen & Sherritt, 2 Harper.....SW NW SW 5-11-14w
Ran 6-in. to 1,831 ft., cleaning out.

Clinton County

H. F. Williams, 1 Bach ..... NW cor. 21-1-2w
Devonian 2,695 ft., dolomite 2,739 ft.
Bert Fields, 1 Zachary .....SW SW NE 1-1-3w
Warsaw 1,847 ft., Osage 1,900 ft.
Snell & Goldsmith, 1 Schaefer SW NE NW 33-2-3w
50 ft. fluid in hole, some salt water, pay 2,515 ft., to treat, T.D. 2,520 ft.

Crawford County

Dorning & Leaser 1 Ducommun N½ NW NW 31-6n-12w
Salem 1,821 ft.
Kidd & Thomas, 1 Headley.....SE SW SW 8-7n-11w
Ste. Genevieve 1,485 ft., show oil 1,500-02 ft. and 1,515-17 ft.

Edwards County

Superior, 1 Scott .....SE SE NE 36-2s-10
Drilling 4,459 ft.

Fayette County

Green, 1 McDonald 23-7-1
Glen Dean 1,345 ft.

Franklin County

E. S. Adkins, 2 Old Ben ..... SW SE NE 24-6s-1
Rosiclair 2,670 ft., saturation 2,613-15 ft., T.D. 2,782 ft., fishing for drill pipe.

Jackson County

Mannellin, 1 Baysinger .....SW SW SW 32-10s-3w
Running 8-in. casing to 1,260 ft., T.D.

Lawrence County

Bradshaw et al, 1 Kirkwood ....W½ SE SE 2-3s-12w
McClosky 1,780-82 ft., S.D.O. 1,835 ft.
Payne, 1 Manjar .....SW NE NW 28-4-11w
Fredonia 1,761 ft., McClosky 1,766-68 ft., showed water, shut down.

Madison County

Corbitt, 1 Keller.....7-3-8w
T.D. 1,285 ft., show oil 1,257-68 ft. and 1,273-75 ft., 70 ft. fluid in hole, 30 per cent water, to acidize.

Montgomery County

Babler Inv., 1 Street.....NW NW SE 31-11-5w
Saturation 610-16 ft., 6¼-in. casing 610 ft., bailed 3 bbl. of oil and small show of water for 3 hours.

Peoria County

Blue Bell O. C., 1 Kyle..... NW SW NW 17-8-6
T.D. 1,000 ft.; P.B. 910 ft., reset 4⅞-in. pipe at 802 ft., drilled plug, filled up 40 ft. with water and small show of oil, rigging up pump.

Randolph County

Christian & Wagoner, 1 Waltemater NW NW 25-7s-6w
McClosky 975-1,000 ft. with small show oil, St. Louis 1,017 ft., T.D. 1,024 ft., S.D.O.
R. H. Anderson, 1 Cassoutt.....SW NW SW 16-7s-7w
Silurian 1,198 ft.

Saline County

Parker & Son, 1 fee.....NW SW SE 8-10s-5
Fishing for stuck drill pipe at 2,178 ft.

Shelby County

Turner, 1 Hoagland.....NW NW SW 14-9n-4e
T.D. 1,985 ft., ran 160 ft. 4½-in. liner to test oil show at 1,978-80 ft., tested no good, drilling ahead.

Wabash County

Dan Wheatley, 1 Feasherly.....SE NE SE 28-1s-13w
Tradewater 1,152 ft.

Wayne County

Rockhill, 7 Twist 33-2s-7
Drilling 5,050 ft.

Macoupin County

Steward, 1 Carlinville Natl. Bnk., NE NE NE 35-9n-8w
Small show of oil at 450 ft., drilling below 505 ft.

Perry County

Blankenship, 1 City Park ..... NE NE SE 13-5s-3w
Drilling 955 ft.

Texas Gulf Coast

(Continued from Page 71)

Wharton County

Hilje field: Titanic, 2 Goar, 5,830 ft., dry.
Pickett Ridge field: Texas, 39-A Pierce, 4,794 ft., 106.17 bbl., ⅛-in. choke.
Withers field: Texas, 25 Broussard, 5,543 ft., 46 bbl., 10/64-in. choke, jetting.
Texas, 55-B Pierce, 5,395 ft., 41.84 bbl., 5/64-in. choke.
Texas, 56-B Pierce, 5,549 ft., 55.34 bbl., 6/64-in. choke.
Texas, 74-C Pierce, perf. casing 5,324-38 ft., 5,369-84 ft., and 5,387-91 ft., 113.49 bbl., ⅛-in. choke.

GULF COAST WILDCATS

Colorado County

Shell, 2 Plow Realty, Obenhaus Sur., Sheridan field. Rig.

Hardin County

Continental, 1 Sweeney, Sec. 5, Ogburn area. Rig.

Harris County

J. W. Frazier et al, 1 Mrs. Theone Killerman Johnson et al, Whitney Britton Sur. Drlg. sh. 6,008 ft.
Humble, 1 Furr, S. Singleton Sur. Rig.
Landreth & Keystone, 2 S-K-B, Sec. 24, Washington Co. R.R. Sur., Mount Houston. Rig.

Jackson County

Barnsdall, 1 Pritchett, A. M. Clare Sur. Rig.

San Jacinto County

Harrison & Abercrombie, 1 Sun fee, Hayes Sur. Rig.

Two Companies in Bankruptcy

The Caddo Crude Oil Purchasing Co., and Rodessa Oil & Refining Co. of Shreveport have been placed in voluntary bankruptcy in the local federal court. Assets of the former company, consisting of pipe lines in Caddo, Lincoln and Webster parishes, were listed at $343,845.39 and liabilities of $336,486.30. The refining company, which has listed assets of $1,440,575.86 in a refinery in Shreveport, listed liabilities at $986,725.19.

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Tri-State Operators Watch East Texas Border Tests

By GEORGE WEBER

SHREVEPORT, La., July 27. — East Texas border counties continued as the most interesting section of the tristate area this week, with activity quiet elsewhere. A slight show of oil in a Bossier Parish wildcat drew some attention in North Louisiana, as did field development in the Olla field, La Salle Parish. South Arkansas, with drilling the lowest in months, saw a slight extension to the Fouke field, Miller County, and continued but unsuccessful tests in the state's deep Smackover lime wildcat in Union County.

EAST TEXAS BORDER

Shelby County and De Soto Parish are of considerable interest currently, with two deep tests staked by Union Producing Co. in the Logansport area. No. 1 Garrett, located southeast of the Joaquin gas-condensate field, is drilling below 3,700 ft., and No. 1-B Garrett, across the Sabine River in De Soto Parish, and northeast of Joaquin, is a location, to be drilled when the first test is completed. Both tests may be located on the extensive Joaquin structure, which is believed to cover several thousand acres in both states.

To the north in Harrison County, Arkansas Louisiana Gas Co. and Union Producing Co. are active in developing the Waskom field. Following the testing of a spray of oil together with gas in the former company's 1-C Abney, the southwest outpost indicated on the accompanying map, leasing and minerals trading became active. Three new tests are now projected: Arkansas-Louisiana, 1-D Abney, drilling just north of the No. 1-C; the same operators, 1 Armstrong, a west outpost location in the Holloway Survey, and Union Producing Co., 1 Karslake, drilling in a south outpost location. Outcome of the tests will reveal much of the extent of the gas-condensate field.

In Bowie County Shell Oil Co., Inc., is nearing contract depth in No. 1 Wall, a J. Downey Survey wildcat, and in the same county, the W. E. Neill, 1 L. Fort ran an electrical survey after reporting a show of oil at 2,280 ft., and is awaiting orders at 2,320 ft. Sabine County's sole wildcat, Sterm & Womack, 1 I. K. Kieth, in the L. Grace Survey, is coring below 5,220 ft.

EAST TEXAS BORDER COMPLETIONS

Smithland—Marion County

J. D. Reynolds, 6-B Terry estate, W. Coore Sur., pumping 27 bbl., T.D. 2,344 ft.

Shelbyville—Shelby County

Superior of Tulsa, 4 Pickering Lumber Co., W. J. Crane Sur. Dry, T.D. 2,610 ft.

EAST TEXAS BORDER WILDCATS

Bowie County

W. E. Neill, 1 L. Fort, 600 ft. NL, 150 ft. EL, 103-ac. tr., L. Peters Sur. T. D. 2,320 ft.; report S.S.O.; ran electrical survey; W.O.

Shell, 1 W. D. Wall 6,900 ft. EL and 4,000 ft. SL of J. Downey Sur.; 6,000-ft. test. Coring 6,221 ft.

Harrison County

Arkansas-Louisiana Gas, 1-D Abney, James Shandoin Sur. Set 13⅜-in. csg. 150 ft.; drlg. 3,017 ft.

Union Prod., 1 Karslake, T. D. Wilson Sur., 2½ mi. SW of Waskom area. Drlg. 3,722 ft.

Marion County

John Coats, 5 Ida Burr, 1,600 ft. due S of No. 2, J. G. Reeves Sur. Set 10¾-in. csg. 39 ft.; cg. 2,360 ft.

T. B. Donnell, 1 Ida Burr, John Reeves Sur. Drlg. 2,177 ft.

Henry & Parson, 1 W. C. Ralph, Eli Usury Sur., 3 mi. N of Jefferson. Set 9⅝-in. csg. 1,012 ft.; flwg. gas and oil; killed; set csg.

Lamar Lindsay, 3 Sid Hart, G. Coore Sur. Set 5½-in. csg. 2,272 ft.; W.O.S.R. 2,365 ft.

J. F. McLaughlin, 1 M. D. Hart, 3,050 ft. WL, 2,425 ft. NL, M. G. Nail Sur. S.D. 1,486 ft.

H. T. Manning, 1 T. O. Livingston, G. Coore Sur. Set 5½-in. csg. 2,303 ft.; W.O.S.R. 2,355 ft.

Texas Canadian, 1 B. Mackey, 282 ft. NL, 218 ft. WL, 35-ac. tr., Lewis Needham Sur. Set 5½-in. csg. 2,290 ft.; S.D.

Morris Tidwell, 2 W. P. Stiles, M. G. Nail Sur. Set 10¾-in. csg. 19 ft.; drlg. 2,195 ft.

Sabine County

Sterm & Womack, 1 I. K. Kieth Southwestern Lands, 400 ft. SL, 500 ft. EL, 53-ac. tr., L. Grace Sur. Coring 5,221 ft.

Shelby County

P. & B. Oil, 2 W. C. Windham, A. K. English Sur. Set 10-in. csg. 170 ft.; T.D. 5,335½ ft.; pmpd. 20 B.F.P.D., 50 per cent salt water; acid and pmpd. 5 B.O. and 28 bbl. salt water; testing.

Union Producing, 1-A Mrs. M. E. Garrett, 932 ft. due E WL, 1,485 ft. N 30° W SL, W. M. Moody Sur. Set 9⅝-in. csg. 1,653 ft.; drlg. 3,712 ft.

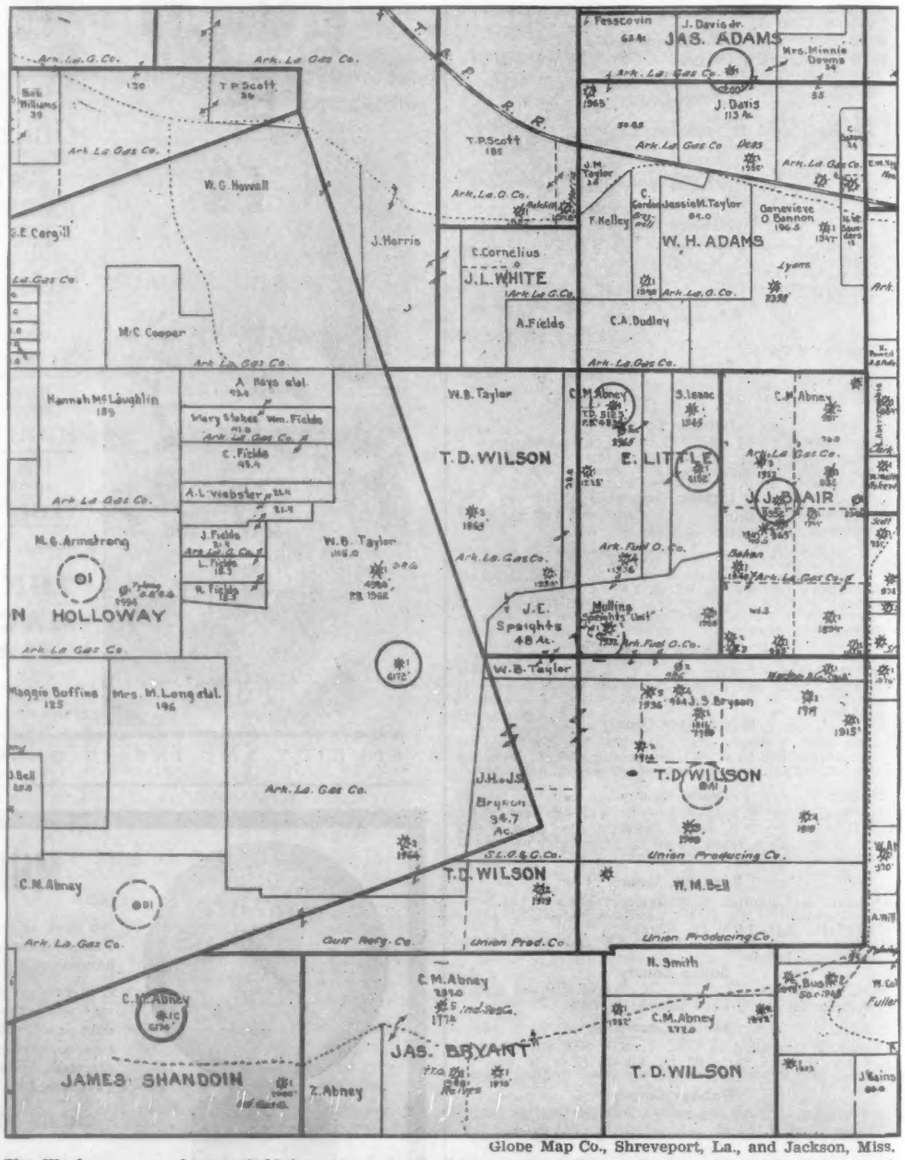
NORTH LOUISIANA

In Bossier Parish Roy L. Reese et al, 1 Bellevue Land Co., a wildcat north of the Bellevue field, cored a sand at 2,888-98 ft. with a slight show of oil, but a drill-stem test made at 2,870-98 ft. recovered 29 stands of salt water in 30 minutes, and the test is coring ahead.

Olla Outpost

Interest in the Olla district of La Salle Parish is centered around the Peterson Petroleum Corp., 1 Tremont Lumber Co., NE SW 25-9-2e, located 5 miles south of the south Olla extension, and 7½ miles south of the field proper. The test cored sand with oil stain between 2,525-35 ft., but later tested salt water in that horizon. A later drill-stem test at 3,035-50 ft., is reported to have shown a recovery of 300 ft. of mud with a show of oil and considerable salt water. The test was deepened to 4,000 ft. and operators took sidewall cores at the 3,035-50-ft. horizon. A string of casing was set at 3,285 ft. and oil sands at 3,038-40 ft. and 3,160-65 ft. will be tested. Salt-water sand was reported to be underlying each of the oil-sand bodies.

In the field proper, two wells were completed on



Globe Map Co., Shreveport, La., and Jackson, Miss.

The Waskom gas-condensate field has attracted attention since the Arkansas Louisiana Gas, 1-C Abney, southwest outpost tested a large gas flow with a spray of oil several days ago. Currently drilling that operator's 1-D Abney, north of the No. 1-C outpost, and Union Producing, 1 Karslake, a south outpost test to the field proper. Deep gas wells in the old shallow gas field are indicated by solid circles, and the present drilling tests and location, indicated by dotted circles show the development trend in the field. Waskom is in Harrison County, East Texas, and extends across the state line into Caddo Parish, Louisiana

the south edge. Four other drilling operations continued active on north and south-edge locations, and in the 2½-mile-south outpost area.

Elsewhere in North Louisiana two other deep wildcats were being watched. Ohio, 15 G. W. Taylor, a deep Haynesville test in Claiborne Parish, topped the Bodcaw sand of the lower Marine formation and was coring over 200 ft. below at 7,891 ft. at latest reports, without reporting any shows. This test was well regarded, in view of the success in finding further production below shallow sands in older North Louisiana fields. The north outpost to Lisbon also in Claiborne Parish is delayed, following abandonment of the Union Producing Co.'s 1,809-ft. hole when No. 1-A Meadows was found to be 1,000 ft. east of correct location. Derrick is being skidded to the correct location and operations will be resumed after a few days' rigging up.

NORTH LOUISIANA COMPLETIONS

Bistineau—Bienville Parish

Arkansas-Louisiana Gas, 1-C Thomas, 710 ft. N, 1,273 ft. E, SW cor. NW 24-16-10. Salt water, T.D. 5,366 ft.

Caddo—Caddo Parish

C. W. Crockett, 1 Tobin et al, 11-20-16. Pumping 25 bbl., T.D. 1,531 ft.
Kendricks & Bashaw, 1 Huckaby-Parker, 14-22-16. Dry, T.D. 1,616 ft.
L. L. Sugar, 2-B Muslow, 32-21-15. Pumping 35 bbl., T.D. 1,558 ft.
Morris, 1 Caddo O. & M. Co., 12-20-16. Pumping 2 bbl., T.D. 1,520 ft.
Tiger O. & G., 1-B Crystal fee, 24-21-16. Salt water, T.D. 995 ft.
G. W. White, 1 Muslow, 31-21-15. Pumping 150 bbl., T.D. 1,550 ft.

Olla—La Salle Parish

Arkansas Fuel Oil, 2-B Goodpine, SW SW 18-10-3e. 144 bbl., 12/64-in. choke, tubing pressure 215 lb., casing pressure 300 lb., perf. 2,250-55 ft.
Placid, 7 Goodpine, SE SW 18-10-3e, 121 bbl. oil and 7 per cent salt water on gas lift, T.D. 2,429 ft.

Monroe—Morehouse Parish

Southern Carbon, 32 Tensas, 28-22-4e, 3,754,000 cu. ft. rock pressure 920 lb., T.D. 2,220 ft.

Monroe—Union Parish

N. & W. Corp., 1 Holloway, 21-21-3e, 2,192,000 cu. ft. gas, rock pressure 1,000 lb., T.D. 2,210 ft.

Dubberly—Webster Parish

W. C. Feazel, 1 Tillman, NE 11-17-9, salt water 6,075 ft.

NORTH LOUISIANA WILDCATS

Bossier Parish

L. K. McGriffin, 1 Tomlinson, 990 ft. S, 600 ft. E, C 16-18-11. T.D. 1,197 ft., T. Nacatoch 1,167 ft., reaming.
R. L. Reese et al, 1 Bellevue Ld. Co., 170 ft. E, 365 ft. N, 27-20-11. Cored sd. slight S.O. 2,888-98 ft., D.S.T. 2,870-98 ft., tstd. S.W., coring 2,910 ft.
Triangle Drlg., 7-C Skannal, 333 ft. NE NE 13-17-12. Set 8⅝-in. csg. 207 ft., T.D. 1,340 ft.
Triangle Drlg., 8-C Skannal, C NE NE 13-17-12. Set 5½-in. 3,146 ft., por. L. 3,090-98 ft., perf. 3,089-3,102 ft., acid and tstg. 3,158 ft.

Caddo Parish

F. W. Bennett, 1 Askew, 28-21-15. Set 6⅝-in. csg. 1,390 ft.; W.O.C.
J. M. Conner, 1-A Williams, 334 ft. N, 986 ft. W, SE cor. NE 3-15-15. Coring 5,620 ft.
C. W. Crockett, 2 Tobin, 11-20-16. Set 10-in. csg. 102 ft., fsg. 920 ft.
Davis & Hart, 1-A Muslow, 9-20-15. T.D. 1,505 ft., tstd. dry, W.O.
L. Halbfass, 1-B Knight Oil & Ld. Co., 1-21-16. T.D. 2,381 ft., P.B. 1,040 ft., set 6-in. csg. 990 ft., tstd. S.W. 1,040 ft., P.B. 1,030 ft., arng. test.
F. G. Holcomb, 1 Sims, 3-20-16. Set 6⅝-in. csg. 1,004 ft., tested S.W., S.D. 1,007 ft., W.O.
R. B. Hollandsworth, 1 Sentell, 1,650 ft. N, 660 ft. E, SW cor. 35-20-14. Coring 2,481 ft.
Morris, 2 Caddo O. & M. Co., 12-20-16. Set 6-in. csg. 1,350 ft., W.O.C.
C. L. Oblinger, 1 Land Co., 3-20-16. Drlg. 359 ft.
Oil & Gas. Inc., 3 Stiles, 28-21-16. Set 10-in. csg. 84 ft., W.O.C.
T. H. Smith, 1 Handschumacher, 18-21-15. Fsg. 845 ft.
L. L. Sugar, 1-A Muslow, 31-21-15. Testing 1,580 ft.
Gehrig, 1 Colored Methodist Church, 637 ft. N, 1,826 ft. E, SW cor. 35-18-14. Rigging up.

Catahoula Parish

H. L. Hunt, 1-A La. Central, SW SW 26-10-6e. Reported S.G. 890 ft., T. Wilcox 2,944 ft., cored S.W. sd. 2,944-47 ft.

Claiborne Parish

Ohio, 15 G. W. Taylor Acct. 1, 100 ft. S and W, C SE 15-23-8. T. Bodcaw sd. 7,654 ft., coring 7,891 ft.

De Soto Parish

District, 1 Frank Grocery Co., 26-12-11. Drlg. 823 ft.

La Salle Parish

O. K. Allen, Jr., et al, 1 Breedlove, SW NE 32-11-3e. T. Wilcox 1,600 ft., drlg. 2,440 ft.
Arkansas Fuel Oil, 1 Gandy unit, SW SE 12-10-2e. Gas sd. 2,208-14 ft., oil sd. 2,217-26 ft. and 2,233-41 ft., perf. 2,243-48 ft., flowed 14 bbl. oil in 8 hours and sanded up, will set screen.
Arkansas Fuel Oil, 1-C Goodpine, 719 ft. S, 663 ft. W, NE cor. 24-10-2e. Rigging up.
Peterson Pet. Corp., 1 Tremont Lbr. Co., NE SW 25-9-2e. T.D. 4,020 ft., set 7-in. csg. 3,285 ft., sd. 3,038-40 ft., S.O.; 3,040-60 ft., S.S.W.; 3,160-65 ft., S.O.; 3,165-95 ft., S.W., testing.

Red River Parish

Thornton & La Croix, 1 Prudential Life Ins. Co., 2,160 ft. S, 440 ft. E, NW cor. 31-11-9. Set 10-in. csg. 80 ft., W.O.C.

Sabine Parish

Shell, 1 Pickering Lbr. Co., NE SW 30-4-12. Drlg. 4,740 ft.

Webster Parish

Midstates, 1 Giddens unit, 282 ft. N and W, SW NE 30-21-9. Drlg. hd. sdy. sh. 7,984 ft.
Hunt Oil, 1 Crawford et al, 250 ft. SE cor. NW SE 30-21-10. Set 13⅜-in. csg. 615 ft., drlg. 2,650 ft.

ARKANSAS

With the deep Smackover lime fields quiet at present, interest is centered on the Fouke field, a Paluxy producer, where Standard Oil Co. of Louisiana completed No. 2 Sturgis, west offset to the discovery. The second test in the field failed to get as good an oil sand section as the No. 1 Sturgis, but swabbed 150 bbl. in 12 hours during the past week, and is being completed on the pump.

In Union County, east of Schuler, Standard Oil Co. of Louisiana continued to test No. 1 Zimmerman, deep Smackover lime wildcat. A string of 6-in. casing was set at 7,400 ft., and plug drilled out to 7,358 ft. Perforations were shot at 7,337-44 ft., and five stands of mud, 12 stands of wash water, 4 stands of slightly brackish water, and 32 stands of salt water were recovered in 2 hours and 20 minutes. Attempts to recement failed when the formation did not break down under 3,500 lb. of pressure. Further perforations were shot at 6,772-78 ft. and a test showed mud, fresh water, brackish water, and salt water. The test is shut down awaiting orders.

Magnolia, which is almost drilled up, has two active rigs running, and Atlanta and Dorchest have one each at the present time. The newly discovered McKamie field of Lafayette County also has one active operation, an offset to the discovery, and the second test to be drilled in the field.

ARKANSAS COMPLETIONS

Fouke—Miller County

Standard of Louisiana, 2 W. P. Sturgis, SE NE SW 1-17-27. 300 bbl., T.D. 4,081 ft.

Troy—Nevada County

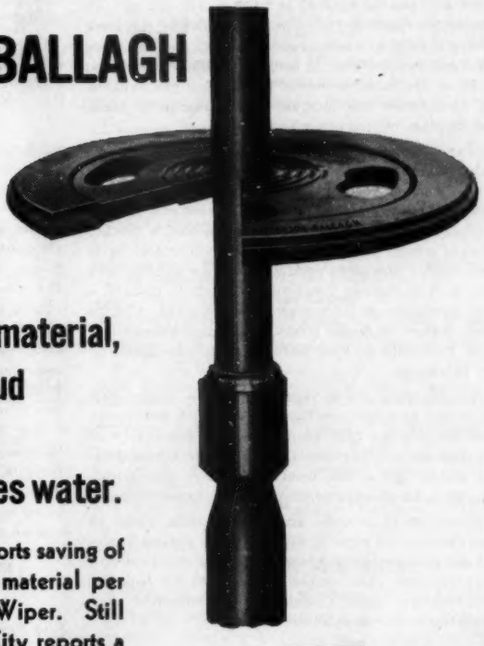
Benedum & Trees, 1 G. Christopher, 11-14-20. Salt water, T.D. 2,186 ft.

Urbana—Union County

Marine, 6-B Thompson, 350 ft. N, 200 ft. W, SE cor. SE SW 3-18-13. 125 bbl., 40 per cent salt water, T.D. 3,553 ft.

(Continued on Page 80)

PATTERSON-BALLAGH PIPE WIPER



saves mud weight material, prevents loss of mud on derrick floor, cleans the pipe, saves water.

One Louisiana operator reports saving of 2 to 4 sacks of mud weight material per trip by use of this Pipe Wiper. Still another operator near Bay City reports a saving of 18 to 20 sacks per trip. "We figure our Pipe Wiper paid for itself the first trip; however it has made 50 to 75 trips and is still in good condition," he declares.

•

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MICHIGAN OPERATIONS

Arenac County Discovery May Reverse Downward Trend

By OTTO C. PRESSPRICH

SAGINAW, Mich., July 29.—Reported to be the biggest flush strike ever made in Adams Township, Arenac County, Rayburn & Major, 1 Yenior, in the NE SW NE 22-19n-3e, located about 1 mile north and 1 mile west of present production, flowed 470 bbl. of oil, naturally, for the first 24 hours. After acidizing with 1,000 gal. the well flowed 53 bbl. in 30 minutes. Two-inch tubing was set and the flow was estimated at 30 bbl. per hour.

Water was found in the Traverse and 6-in. casing was set at 2,525 ft. Top of the Dundee was logged at 2,870 ft. and the well started flowing at 2,879 ft.

Production continued to dwindle, meanwhile, the week resulting in only five new producing wells and two more natural gas completions. In contrast, drillers abandoned 14 tests as dry holes, a few of them being gas explorations, abandoned one location and temporarily abandoned drilling on two other tests.

Two wells accounted for nearly all the 1,134 bbl. daily initial production added by last week's developments. One was a 507-bbl. completion by McClanahan Oil Co. in the Wise field of Isabella County, the other a 500-bbl. well reported by Smith Petroleum Co. in Kent's Walker Township sector. There were no other completions in either county. The other producers were a 42-bbl. Stork Oil Co. well in Bentley Township of Gladwin County, a 50-bbl. producer in Monterey Township of Allegan County, drilled by Regis P. Cook and a 35-bbl. well in Geneva Township of Van Buren County completed by Smith Petroleum.

Operators scheduled a venture into the Upper Peninsula as the hunt for new fields in the state broadened. McKee Exploration Club plans a test in Section 18 of Bruce Township, Chippewa County. That Upper Peninsula section got a few tests some years ago, which were said to have revealed oil-producing possibilities.

Four of the 16 permits are for gas tests, three in Arenac County, the other a wildcat test in Pinora Township, Lake County. Allegan and Ottawa counties got two wildcat locations each, others being listed for Isabella, Osceola, Ingham, Clare, Chippewa and Gladwin.

Following is the completions summary:

Allegan County

Dorr Township: Bridger Basin Oil Corp., 1 G. A. Bachman, SW SE NE 30-4n-12w. Dry. T.D. 1,630 ft.
Gunplain Township: Tamblyn Dev., 1 Glenn Brown, W½ NE NE 33-1n-11w. Dry. T.D. 1,461 ft.
Heath Township: Wiser, 4 John Klein, SE SW SE 4-3n-14w. Dry. T.D. 1,495 ft.
Fisher-McCall, 1 Hulsman, NE NE NE 9-3n-14w. Dry. T.D. 1,521½ ft.
Hopkins Township: Bell-Marks, 1 B. Snell, C E 30 acres SE 36-3n-12w. Dry. T.D. 1,773 ft.
Monterey Township: Regis P. Cook, 2 Wright, NW SW SW 9-3n-13w, 50 bbl. acid, T.D. 1,700 ft.

Barry County

Thornapple Township: M. Bliss Keeler, 1 L. D. Fisher, C SE NE 32-4n-10w. Dry. T.D. 1,958 ft.

Clare County

Freeman Township: Taggart Brothers, 32 L. R. Perkins, NE 15-18n-6w. 1,050,000 cu. ft. gas. T.D. 1,498 ft.
Lincoln Township: Taggart Brothers abandoned location C SW 7-18n-5w for No. 23 Harrison-Sherwood.

Gladwin County

Bentley Township: Stork, 3 Hugh Connolly et al, NW SE NW 35-17n-2e. 42 bbl., acid, T.D. 3,530 ft.

Isabella County

Wise Township: McClanahan, 5 Nixon, NW SE SE 17-16n-3w. 507 bbl., acid, T.D. 3,706 ft.

Kent County

Walker Township: Smith Pet. et al, 1 McShane et al, SE NE SE 32-7n-12w. 500 bbl., acid, T.D. 1,804 ft.

Montcalm County

Richland Township: E. C. Dailey, I David Albaugh, C SW 8-12n-5w. 537,000 cu. ft. gas, T.D. 1,231 ft.

Muskegon County

Blue Lake Township: Voorhees, 1 Thomas Cussen, SW SW NW 5-12n-16w. Dry. T.D. 2,306 ft.
Cedar Creek Township: Wyman & Creech, 1 Herbert Griswold, NE NE NE 28-11n-15w. Dry. T.D. 1,850 ft.
Fruitport Township: Robert C. Lentz, Tr., 1 J. R. Anderson, NW SE NW 36-9n-16w. Dry; T.D. 1,808 ft.

Newaygo County

Brooks Township: Milton D. Shine, 1 VanHorn, SE SW SE 4-12n-12w. Dry. T.D. 2,405 ft.

Ottawa County

Tallmadge Township: Swanson Consolidated, 1 Hart, NE SW SE 29-7n-13w. Dry. T.D. 1,936 ft.

St. Clair County

Port Huron Township: John C. Gaines, 1 W. F. Beach, SE SW NW 32-7-17e. Temporarily abandoned at 615 ft.

Shiawassee County

Antrim Township: Leonard H. Bloo temporarily abandoned No. 1 Jacob Hoffman, SE SE NE 6-5n-3e, at a depth of 775 ft.

Van Buren County

Bangor Township: Brown, Downs & Kuhns, 1 F. Brown, SW SW NE Section 30. Dry at 1,295 ft.
Slagel Drilling Co., 1 B. G. Kennedy, SW SW NE Section 21. Dry. T.D. 1,031 ft.
Geneva Township: Smith Pet., 1 Laura M. Fellows et al, W½ SW SW 22-1s-16w. Produced 35 bbl., acid, T.D. 1,045 ft.
Twin Drilling, 1 Grant, SE SE SW 16-1s-16w. Dry. T.D. 1,038 ft.

Permian Basin Fields

(Continued from Page 67)

NORTHERN WEST TEXAS

The indicated completion of Magnolia, 1-B Mallett, the most important test yet drilled in the link area between the Duggan and Slaughter fields, was seen as the week closed. Located in Labor 13, League 50, Scurry County School Lands Survey and about midway between production in both fields, the well reported continuous porosity from 4,985 to 5,043 ft. It is bottomed at 5,044 ft. where completion work will commence. It has been acidized with 1,000 gal. but is scheduled for two more treatments.

The first crude was run through Basin Pipe Line Co.'s new carrier from the Wasson field to Cosden Petroleum Corp.'s refinery at Big Spring during the week. With crude from the line's connections in the field being run into storage since July 15, a sufficient amount was on hand to start through the 97-mile line last week.

NORTHERN WEST TEXAS COMPLETIONS

(24-hour gages)

Andrews County

Ella Cowden field: Atlantic, 1-23 University, 172 bbl., 4,250-4,470 ft.

Cochran County

Duggan field: Texas Co., 1-F Mallett, 458 bbl., 5,006-59 ft.

Gaines County

Wasson field: Continental, 4-50 Wasson, 1,259 bbl., 4,880-5,040 ft.
Seminole field: Magnolia and Atlantic, 8-219 H. & J., 1,071 bbl., 5,090-5,250 ft.
Osage, 3-B Tippett, 723 bbl., 5,130-5,338 ft.
Wildcat: Richmond Drlg., 1 Brumley, dry at 4,664 ft.

Scurry County

Sharon field: Buffington, 2-A Chapman, 18 bbl., 1,640-1,750 ft.
F. W. Merrick, 4 National Bank, 113 bbl., 2,115-2,501 ft.

Yoakum County

Wasson field: Aloco, 6 Johnson, 572 bbl., 4,927-5,294 ft.
Don Danvers, 1 Comer, 1,115 bbl., 4,970-5,200 ft.
Honolulu, 8-890 Hovencamp, 1,516 bbl., 4,895-5,075 ft.
Honolulu, 4-761 Oil Development, 855 bbl., 4,988-5,190 ft.
Magnolia, 17 Mahoney, 400 bbl., 5,183-5,212 ft.
Oil Development, 4-765 fee, 679 bbl., 4,890-5,235 ft.
Plymouth, 1-G Bennett, 187 bbl., 5,060-5,250 ft.

WILDCAT OPERATIONS

Andrews County

Phillips, 1 Embar, 60 ft. from S line of Sec. 31, Blk. 10, University Lands Sur. Loc.
Texas Pacific, 1-A Midland farms, NE NW Sec. 1, Blk. 40, Twp. 1n, T.&P. Sur., 5,000-ft. test. Drlg. below 4,668 ft.

Brewster County

J. W. Quinn, Tr., 1 S. L. Strumburg, NW cor. SE Sec. 70, Blk. G, M.K.&T.E. Sur.; 2,500-ft. test. S.R. hole 984 ft.

Howard County

C. T. McLaughlin, 1 Pete Johnson, NE NE Sec. 34, Blk. 32, Twp. 1n, T.&P. Sur. Drlg. 3,350 ft.
M. L. Richards, 1 Thelma J. Cole, SE NW Sec. 12, Blk. 26, H.&T.C. Sur.; 3,500-ft. test. Drlg. 2,365 ft.

Stonewall County

Shell, 1 J. D. Patterson, SW NW Sec. 393, Blk. D, H.&T.C. Sur.; Ordovician test. Drlg. 3,445 ft.
Shell, 1 Smith, Sec. 143, Blk. 1, H.&T.C. Sur. Top Mississippian at 6,007 ft.; top saturation at 6,015 ft. and drilled to T.D. 6,028 ft. in saturation; flwd. 280 bbl. oil in 24 hrs.; T.D. 6,085 ft.; well flwd. 68 B.O.P.D.; still making some oil with tools in the hole.

Yoakum County

Amerada, 1 A. M. Brownfield, NE SW Sec. 620, Blk. D, Gibson Sur.; 5,500-ft. test. T.D. 5,769 ft.; sul. wtr.; tstg. after deepening 500 ft.
Sloan & Zook, 1 Waples-Platter, Sec. 565, Blk. D, Gibson Sur. Drlg. 3,200 ft.

SOUTHEAST NEW MEXICO

HOBBS, N. M., July 29.—An increased flow at Eddy County's new discovery near Lake McMillan last week centered the attention in the southeastern New Mexico fields. The strike, Martin Yates, Jr., 1 McCall, SW SW 24-18-26, reported a flow of 41 bbl. of oil in 14 hours after being shot with 60 qt. from 1,017-32 ft., total depth. Following this gage the well was shut in for 12 hours and when opened flowed 7½ bbl. hourly for 3 hours through ⅛-in. choke on tubing.

As a new operation in the area, Jones & Yates are moving in materials for a wildcat nearly 2 miles northwest of the No. 1 McCall discovery. It is No. 1 Everest, located in NE SE 15-18-26.

It was also reported that George Livermore, a West Texas operator, was moving in materials for a wildcat test in the area where Lou Stogner and Sam Weiner abandoned a test at 1,373 ft. recently. The abandoned test was junked after operators were unsuccessful in drilling by whipstock. The test was located in the SE SE SE 30-12-32, in the northwestern part of Lea County. Exact location of the Livermore test was unreported.

SOUTHEAST NEW MEXICO COMPLETIONS

Eddy County

Red Lakes field: Tigner-Etz-Keyes, 6-A Keyes..... NW SW 10-17-28
25 bbl., pumping from 1,740-1,801 ft.
Jackson field: Republic, 9 Russell ... NW SE 18-17-31
51 bbl., flowing naturally through open tubing from 2,860-3,486 ft.
Loco Hills field: Stroup & Yates, 1 Yates, SE SE 5-18-29
Dry at 2,595 ft.
Archer & Jones, 1 Massie.....NW NE 20-18-29
Dry at 3,350 ft.
Martin, 4 Gates.....SW SW 15-18-29
Dry but not plugged at 3,191 ft.
Shugart field: Addison Oil, 2-A Ginsberg SW NE 17-18-31
112 bbl., shot from 3,175-3,212 ft.

Lea County

Arrowhead field: Humble, 7 Greenwood NW SE 9-22-37
328 bbl. in 8 hours from pay bottomed at 3,715 ft.
Gulf, 3-C Leonard-State..... SW NW 36-21-36
Flowed 329 bbl. in 13 hours from total depth 3,840 ft.
Amerada, 2-PA State .....SE SW 18-22-37
Flowed 218 bbl. daily from total depth 3,825 ft.
Mattix field: Continental, 4-A-29 Jack ..SW SE 29-24-37
Flowed 116 bbl. in 14 hours from pay from 3,490-3,589 ft.
Halfway field: Argo Oil, 2-B Texas Co.-State SW NW 16-20-32
Dry at 2,690 ft.
Cooper field: Culbertson & Irwin, 1 Cooper..... SW NE 12-24-36
Flowed 25 bbl. hourly from pay from 3,515-88 ft.

SOUTHEAST NEW MEXICO ACTIVE WILDCATS

Eddy County

Jones & Yates, 1 Everest.....NE SE 15-18-26
First report.
M. Yates, Jr., 1 McCall ..... SW SW 24-18-26
Drld. sat. 1,022-32 ft.; flwd. 41 B.O. in 14 hours; tstg.
Trojan, 1 Grant ..... SW NE 33-20-25
Drlg. 1,745 ft.
Schumacker, 1 Levers .....NE NE 33-16-29
Drlg. 2,410 ft.
J. B. Cowden, 1 State ..... SW SE 3-17-20
Between Root field and High Lonesome. Drlg. 785 ft.
Artesia Drlg. Co., 1 Hoffman ... SE SE SE 14-17-24
Est. 1,250,000 cu. ft. at 938 ft.; drlg. 1,478 ft

Lea County

Stanley & Weiner, 1 Saunders ..... NE NE 20-21-38
Rng. csg. 1,620 ft.
Ventura Oil, 1 Lowe ..... SW SE 26-13s-37e
6,000-ft. test. Top anhydrite 2,190 ft. Top Yates sand 3,150 ft. Drlg. below 4,025 ft.

TEXAS PANHANDLE

AMARILLO, Tex., July 29.—There were seven new oil wells, two gas wells and two abandonments listed for the Texas Panhandle fields during the past week. This is a considerable decline over the week preceding in which a total of 22 completions were listed. The total new potential of the wells is 2,255 bbl.

PANHANDLE COMPLETIONS

(24-hour gages)

Carson County

Magnolia, 77 fee, temporarily abandoned.
Magnolia, 84 fee, 162 bbl., 3,000-62 ft.
Red River Gas, 1-B Deahl, 370,000,000 cu. ft. gas, 2,506-2,815 ft.
Shell, 16 Cooper, 349 bbl., 2,995-3,103 ft.

Gray County

Shirley Clum, 1 Davidson, 230 bbl., 2,982-3,061 ft.
(Continued on Page 79)

Deep Test in Northeast Ohio Finds Oriskany Sand Dry

By STAFF CORRESPONDENT

EVANSVILLE, Ind., July 29.—There were 12 completions in Indiana during the past week and one location abandoned. There were five oil wells completed for a total initial of 394 bbl., three of them in Posey County and two in Gibson County. There were 15 new operations reported, five in Posey County, four each in Spencer and Gibson counties and one each in Crawford and Jay counties.

Gibson County led the parade in wells drilling with 30 active operations, Spencer was second with 11 and Posey third with 10. Daviess County had six tests, and Sullivan County had five tests; the remainder of the work was scattered among 21 other counties.

COMPLETIONS

Gibson County

A. L. Braden, 1 Simpson .....NW SE NE 19-2s-11w
Pumped 85 bbl., old well drilled deeper from 2,030 to 2,927 ft.
Hollandsworth Brothers, 5 Cooper..NW SE NE 24-3s-14w
Pumped 115 bbl., shot 80 qt. 2,519-43 ft.
Brown et al, 1 Sullivan .....SE NW SW 20-3s-13w
Dry, T.D. 2,906 ft., will not run casing.
Newton Pipe Line Co., 2 Carrithers NE SE SE 26-1s-10w
Dry, mechanical difficulties, T.D. 1,547 ft.

Marion County

White River O. & G. Co., 1 Indianapolis W. C. .....
NE NE SW 15-16n-3e
Dry, T.D. 909 ft.

Posey County

Creager-Lewis, 1 Dietz .....NE NW SE 1-7s-12w
Pumped 14 bbl., T.D. 1,793 ft.
Superior, 27 New Harmony.....SW NW SE 8-5s-14w
Pumped 10 bbl., pay 2,970-72½ ft., T.D. 2,978 ft., acid 2,000 gal.
Harry Sandler, 2 Keck.....NW SW NE 34-3s-14w
Flowed 170 bbl., shot 20 qt. 2,790-2,811 ft.

Spencer County

L. M. Steel et al, 1 Eiglemann .. NW NW NE 22-7s-6w
Dry, Ste. Genevieve 1,315 ft., T.D. 1,499 ft.
O. F. Kelley et al, 1 Kincaid.....NW SE 28-7s-6w
Dry, T.D. 1,010 ft.

Stark County

R. J. Viloette, 1 Hankey .....SW NW SE 18-32n-4w
Dry, T.D. 520 ft.

Sullivan County

L. B. Scott, et al, 1 Mattox.....SW NE NE 19-8n-9w
Dry, T.D. 1,220 ft.

DRILLING REPORTS

Gibson County

K. T. & F. Oil Dev. Co., 1 Shoult....NE NE SE 18-1s-9w
Hardinsburg 1,299 ft., show oil 1,312-19 ft., T.D. 1,320 ft., to shoot.

Posey County

Clint Crosby, 1 Sherer..... NW NW SW 13-7s-13w
Old well plugging back from 2,791 to 2,469 ft., W.O.C.
W. C. McBride, 1 Swanders.....NW NW NE 4-4s-14w
Menard 2,018, drilling 2,162 ft.

Spencer County

O. L. Sturbois, 4 Boyd..... NW NE NE 31-7s-6w
Gas 919-23 ft., oil 925-31 ft., putting in pump.

NEW OPERATIONS

Crawford County

C. M. Tieman, 1 Unnamed.....NE NE NW 22-1s-2e
Spudded.

Gibson County

Hall Edwards, 9 Maier .....SW SE SE 14-3s-14w
Location.
Hall Edwards, 8 Maier .....NE SW NW 13-3s-14w
Location.

Jay County

Ellen Burke, 2 Lyons.....NE SE SE 23-22n-14e
Location.

Posey County

Max Cohen, 1 Williams.....SW NW NW 4-4s-13w
Rigging up rotary.
Nelson Dev. Co., 1 Horstman.....NE SE NE 7-6s-12w
Spudded.
Paul Rossi, 2 Egli .....SE SE NW 19-6s-12w
Rigging up rotary.
Ray Ryan, 4 Keck.....SE NW NW 34-3s-14w
Drlg. 2,184 ft.

Spencer County

Bowen Hoover, 1 Rothert.....SW NW NW 1-5s-6w
Location.
Blosser, 2 Harvey.....NE SW NW 4-8s-6w
Rigging up machine.
Damron, 2 Boyd.....SW SE SE 30-7s-6w
Drlg. 300 ft.
Snell and others, 1 Graham.....SE NW NE 15-6s-7w
Spudded and shut down.

OHIO FIELDS

WASHINGTON County test finds water in the Oriskany sand, Columbia Carbon, 1 J. C. Stollar, Section 32, Palmer Township, topped the Oriskany sand at 3,943 ft. with water coming in at 3,950 ft. Bottom of sand is at 3,970 ft. The sand was void of oil or gas. Top of Corniferous lime was had at 3,833 ft. The hole will be plugged back to test a gas showing encountered in the Berea.

Mahoning County, Berlin Township, Magnolia Petroleum Co., 1 F. M. Fields, Section 19, had the Oriskany sand at 3,265-73 ft., no oil, gas or water was showing; drilling is being continued.

A St. Peter test has been staked in Southwestern Ohio in Clinton County, 1¼ miles north of Wilmington on State Route 134 by the United Central Oil & Gas Co. on the Frank Pond tract.

Twenty-four completions were reported in the Ohio fields, 14 gas wells, 5 oil wells and 5 dry holes. Perry County yields a 72-bbl. oil well for the best completion of the week.

OHIO COMPLETIONS

Athens County

Bern Township: Ohio Fuel Gas, 1 P. A. Ross, Section 18, 235,000 cu. ft. of gas, Macksburg 800-ft. sand 1,014-33 ft.
Canaan Township: Wallace et al, 1 G. Morris, Section 13, is a small gasser, second Berea at 1,407-20 ft.
York Township: Ohio Fuel Gas, 187 and 188 Sunday Creek Coal Co., Fraction 32, No. 187, 100,000 cu. ft. gas at 270-80 ft.; No. 188, 130,000 cu. ft. gas at 269 ft.

Ashland County

Lake Township: Stewart et al, 1 J. F. Mosher, Section 21, Berea dry, total depth 775 ft.

Gallia County

Addison Township: C. A. Cody, 1 Anna Rothgeb, Section 17, 190,000 cu. ft. gas, second Berea 1,721-44 ft.

Knox County

Butler Township: Ohio Fuel Gas, 1 E. D. Billman, Section 16, Clinton dry, total depth 3,009 ft.

Licking County—Newark Field

Madison Township: J. C. Bebout, 2 Lewis Flurshultz, Lot 5, second quarter, 880,000 cu. ft. gas, Clinton at 2,637-68 ft.
Newton Township: Ohio Fuel Gas, 13 Dewitt Hansberger, fourth quarter, 260,000 cu. ft. gas, Clinton at 2,574-99 ft.

Lorain County

Grafton Township: Forest, 7 Chas. W. Wise, Lot 53, 1-bbl. pumper, Berea at 122-64 ft.

Medina County

Hinckley Township: William Dempsey, 1 J. T. Hutchinson, Lot 90, 180,000 cu. ft. gas, Clinton sand at 3,319-29 ft., total depth 3,414 ft.
Sharon Township: Wood, 1 and 2 H. M. Woodward, Lot 26, both dry in the Berea, total depths 580 ft. and 526 ft.

Monroe County

Bethel Township: H. E. Fleeman et al, 3 Allie Beardmore, Section 5, 110,000 cu. ft. gas, 1,317-40 ft.
Sunsbury Township: H. B. Walker, 1 Howard Platt, Section 33, 150,000 cu. ft. gas, Berea at 2,147-52 ft.

Morgan County

Center Township: Patten & White, 3 W. C. Fischer, Section 23, 8 bbl. first 24 hours after shot from Berea at 1,573-80 ft.
Marion Township: Shabbott, 1 George W. Teeters, Lot 25, 930,000 cu. ft. gas, Brill sand at 962 ft.
W. S. Williams, 1 Earl Bowman, Lot 7, 250,000 cu. ft. gas, Brill sand at 1,004 ft.

Noble County

Elk Township: Metcalf et al, 1 F. J. Springer, Section 28, 1-bbl. pumper at 1,018-25 ft.

Perry County

Clayton Township: Davis & Hazelett, 1 Kehota Coal Co., Section 9, 72 bbl. first 24 hours after shot, Clinton 3,343-70 ft.
Gas Producing, 5 E. E. Williams, Section 18, 800,000 cu. ft. gas, Clinton at 3,232-72 ft.

Tuscarawas County

Lawrence Township: Status Development, 1 Wandle Co., Lot 91, 300,000 cu. ft. gas, Clinton at 4,670-84 ft.
Fairfield Township: East Ohio, 2 Reeves Mfg. Co., Lot 8, Clinton broken and dry, total depth 5,253 ft.

Washington County

Aurelius Township: Baker & Dailey, 1 P. D. Howiler, Section 17, 2-bbl. pumper, Berea at 1,455-63 ft.

WESTERN KENTUCKY

OWENSBORO, Ky., July 29.—Completions in western Kentucky during the past week consisted of 15 wells of which 6 were producers. Initial production from the six wells, all in Jett and Pennsylvanian sands, totaled 505 bbl.

Completions, first reports, and drilling reports from important wells were as follows:

Ballard County

Northwest of Bandana: J. R. Todd et al, 1 Rudd. Dry, T.D. 1,440 ft.

Breckinridge County

Van Zandt district: G. W. Kelliboker et al, 1 W. Beasley. Spudding in.

Daviess County

Cane Run School district: F. F. Gibson et al, 3 Mrs. L. V. Howard. Dry, drilled deeper, McClosky 1,496-1,517 ft.
Handyville district: Staves, 6 L. I. Iglehart. 250 bbl., Jett sand, T.D. 1,286 ft.
A. Teiler, trustee, 2 E. F. Lebow. 150 bbl., Jett sand, T.D. 1,266 ft.
Maceo district: Hart & Hart, 3 William Nance. 10 bbl., Jett sand, T.D. 791 ft.
Utica district: W. E. Hupp, 1 C. H. Stevens. Drilling at 250 ft.
H. C. Farmer et al, 5 Martin Weaver. 75 bbl., combination Jett and Jones sands, T.D. 1,221 ft.
Baldwin, 5 Dr. A. A. Westerfield. Rigging up.
H. C. Farmer, 2 Parrish Wheeler. Drilling at 150 ft.

Hancock County

Pellville district: Garland & Henderson, 1 T. Jackson. Dry, T.D. 621 ft.
Cloverport district: Reverend Hunger, trustee, 4 C. A. Johnson. Dry through McClosky, T.D. 519 ft.
Patesville district: P. A. Turner, 2 C. S. Nix. Abandoned location.

Henderson County

Sebree district: T. L. Boyce, 4 Arrabella Walker. 10 bbl., Upper Pennsylvanian sand, T.D. 801 ft.

Logan County

Southeast of Pauline: Ohio, 1 Dr. A. M. Belcher. Dry through Devonian, T.D. 1,650 ft.

Ohio County

Adaburg district: Dr. Hardie, 9 Nannie Bean. Dry through Jett sand, T.D. 603 ft.
Leeper, 4 Mary E. Freeman. Dry through Jett sand, T.D. 765 ft.
J. C. Ellis, 4 S. M. Greer. Moving in.
Oaks district: Sohio, 16 Sallie J. Bedell. Moving in.
Friendship Church district: J. A. McCowan, 3 J. T. Edge. Drilling at 400 ft.
Narrows district: W. G. Obins, 2 D. Harrison. Dry, T.D. 333 ft.
Dundee district: Sohio, 2 J. E. Mitchell. 10 bbl., drilled deeper from 400 ft. through Jackson sand, T.D. 561 ft.
Pleasant Grove Church district: E. E. Borders et al, 2 U. S. Moxley. Dry, through Jett sand, T.D. 186 ft.

EASTERN KENTUCKY

ASHLAND, Ky., July 29.—One oil well was completed in eastern Kentucky this week while other activities remained on about the same general level. A dry hole was reported and one company has listed several new locations.

The Virginian Gasoline & Oil Co. reports the completion of a well on the Cassady heirs' land in Martin County and gives the following production data: The well made 30 bbl. daily when drilled in, produced about 170 bbl. daily after being shot July 13, but has dropped off and is now making about 100 bbl. of oil.

Greenup County, William Forman et al are rigging up at No. 1 on a 1,000-acre lease west of Hunneywell and 1 mile east of Oldtown, near the Little Sandy River.

Carter County, William McKinney, operator for a Michigan group, has location for a well and is rigging up according to data received here today. The well is near the head of Wilson Creek.

Floyd County, Kentucky-West Virginia Gas Co. is plugging a dry hole at No. 5263 J. P. Sturgill.

Permian Basin Fields

(Continued from Page 78)

Cree & Hoover, 1 Davidson, junked at 3,032 ft.
Magnolia, 33 fee, 208 bbl., 2,890-2,918 ft.

Hutchinson County

Clay Bros., 2 W. E. Herring, 3,870,000 cu. ft. gas, 2,852-3,050 ft.
Kewanee Oil, 42 Lewis, 628 bbl., 2,867-2,981 ft.
Stanolind, 15 Pitcher, 384 bbl., 3,045-3,150 ft.
Stanolind, 14 Watkins, 294 bbl., 2,830-2,931 ft.

WILDCAT OPERATIONS

Childress County

Texas, 1 P. B. Smith, NW NW Sec. 97, Blk. 9, H.&G.N. Sur.; 7,500-ft. contract. Drlg. 2,110 ft.

Hall County

Humble, 1 A. D. Weaver, SW NW Sec. 51, Blk. 1, S.P. Sur.; 7,500-ft. test. Drlg. 2,550 ft.

Interesting Deep Tests Under Way in S. W. Pennsylvania

By STAFF CORRESPONDENT

PITTSBURGH, Pa., July 29.—On Chestnut Ridge in South Union Township, Fayette County, Pennsylvania, the Peoples Natural Gas Co. is hauling in material for No. 3 Piedmont Coal Co., located ½ mile south 30° west of its No. 1. It is 1,600 ft. west of the Ridge Road or considerably down the west flank from the surface high. Its No. 1 on this lease was drilled by rotary tools through the Oriskany sand, which was dry, but completed above that formation as a good gas well in the Onondaga chert beds. Its No. 2, just southwest of Point Lookout on U. S. Route 40, reached 5,654 ft. and is shut down straightening a crooked hole. Both the Nos. 2 and 3 are using standard cable tools.

During the past week 43 operations were completed of which 8 were dry, 20 gas wells, and 10 oil producers with a daily initial of only 35 bbl. In addition five input wells for water flooding were completed in Ohio.

SOUTHEAST OHIO

The important test of the Magnolia Petroleum Corp. on the F. M. Fields farm, Section 19, Berlin Township, is drilling at 3,875 ft. in the Big lime. The Oriskany sand was placed at 3,265-73 ft. and was void of production.

Fairfield County: Gas Producing, 1 W. A. Miller, SW Section 14, Walnut Township, dry, lime, T.D. 2,045 ft.

Hocking County: Preston, 1719 Sunday Creek Coal Co., NW Section 11, Ward Township. Light show of oil and gas, plugged, Clinton, 3,607 ft.

Licking County: C. R. Settles, 1 Lester Mears, Section 10, Hanover Township, 200,000 cu. ft., Cinnamon, 1,263 ft.

Medina County: Fred C. Shaner, 2 Margaret Matthews, Tract 15, Lot 31, Chatham Township. 8 bbl., shot, Berea grit at 501 ft.
R. C. Holmes et al, 03 A.B. and Mary Hostettler, Tract 14, Lot 1. 1 bbl, shot, Berea at 479 ft.
R. C. Holmes, 04 and 05 Grover J. Rumbaugh, Tract 14, Lot 1. 1-bbl. pumpers at 494 and 505 ft.
R. C. Holmes, 2-W Grover J. Rumbaugh, as an input well for water flooding, at 509 ft.
R. C. Holmes, 11 F. H. Ripley, Tract 15, Chatham village, 2 bbl. at 504 ft.
Marine Trust Co. completed Nos. 08, 09, 013, 014 Daniel Ross farm, Tract 13, Lot 7, at 395 ft., 404 ft., 400 ft., and 384 ft., all Berea input water wells.

Morgan County: George White et al, 3 Lydia V. Fischer, west side Section 24, Center Township, 8 bbl., shot, Berea at 1,580 ft.

Noble County: S. L. Skinner, 2 F. C. Hughes, N½ Section 9, Jackson Township, some oil with a lot of water in 700-ft. sand at 827 ft.

Perry County, Clayton Township: Crude Oil, 1 Virgil Williamson, SW Section 10. Clinton at 3,275 ft. It produced 10 bbl. the first day without shot.
Gas Producing, 4 Mary E. Koehler, SE Section 18, 300,000 cu. ft., Clinton, 3,270 ft.
Preston, 4 Albert G. Randolph, NW Section 17, 10 bbl., Clinton at 3,270 ft.

WEST VIRGINIA

Hancock County, Grant district: R. J. Braden Co., 53 C. E. Brenneman, 1 bbl., Berea at 1,068 ft.
R. J. Braden Co., 55 same farm, dry at 986 ft.
R. J. Braden, 1 F. Porters, dry at 986 ft.
R. J. Braden Co., 15 J. C. Hamilton, dry at 986 ft.

Ritchie County: Bickle Oil, 11 Hall and Tetrick, in Grant district, 1 bbl., Maxton sand at 1,715 ft.

Union district: John L. Davis, 1 A. C. Blair, dry, Injun sand at 2,100 ft.

Gas Wells

Boone County: Owens, Libby-Owens, 30 Cassingham Coal Land Co., in Scott district, 275,000 cu. ft., Berea sand, rock pressure 305 lb., at 2,173 ft.

Clay County: Pittsburgh & West Virginia, 7740 P. M. Summers et al, Buffalo district, dry, Injun sand at 2,042 ft.

Lewis County: McCall, 1 E. J. Rinehart, Freemans Creek district, 184,000 cu. ft. a day from 1,815-20 ft. Big Injun sand 1,795-1,880 ft. T.D. 1,905 ft.

Lincoln County: Roy & McComas, 1 Oliver Adkins, in Union district, 168,000 cu. ft. of gas, shot, Berea and Brown shale, 3,200-3,530 ft. T.D. 3,539 ft. Drilled deeper from 2,253 ft.

Marion County: Hanley, Beatty and McIsaac, 1 S. C. Thorn, in Mannington district, 240,000 cu. ft., Fifty Foot Gordon and Gordon stray sands. Drilled deeper to 2,865 ft.

Marshall County: Hope Natural, 7914 William Shaffer, in Meade district, 450,000 cu. ft. a day from the Gordon stray sand. Drilled deeper to 3,269 ft.

Putnam County: Summit Gas, 1 John Burdette farm in Curry district, Big lime at 1,345-1,514 ft.; Big Injun 1,514-84 ft.; Berea 2,025-48 ft.; 116,000 cu. ft. a day, 36 hours after shot. T.D. 2,048 ft.
Laywell Gas, 1 M. R. Clark (E. J. Elkins), Big lime at 1,444-1,654 ft.; Big Injun 1,674-1,700 ft.; Berea 2,241-64 ft., 212,000 cu. ft. a day. T.D. 2,281 ft.
Teavee Oil & Gas, 1 Walter and Roscoe Gibson, Teays Valley district, Big lime at 1,428-1,524 ft.; Big Injun 1,593-1,654 ft.; Berea 2,095-2,123 ft., 134,000 cu. ft. T.D. 2,189 ft.

Ritchie County: D. A. Cronin, 1 H. H. Goff, in Murphy district, 1,500,000 cu. ft., Big Injun sand 1,900 ft.
John R. Geho, 1 J. N. Eddy heirs, 472,000 cu. ft., Injun sand, shot, at 1,982 ft.
Clem S. Morris, 4 W. E. Cox, 250,000 cu. ft., Injun sand at 2,192 ft.

Upshur County: Cumberland & Allegheny, 298 L. S. Echard, in Meade district, Fifth sand 2,070-95 ft., 936,000 cu. ft. at 2,088-93 ft. T.D. 2,176 ft.

Wayne County: James Webb et al, 1 Pauly Stephens farm in Union district, 168,000 cu. ft., Injun and Brown shale at 3,150 ft.

Oriskany Gas Field

Kanawha County: Godfrey L. Cabot, 8 Putnam Co., Poca district, 2,475,000 cu. ft., Big lime at 1,920 ft.

NEW WORK

Braxton County

Joe Rubin, 1 Virgil Sands et al, Otter district, elevation 913.55 ft.
Big Trace, 1 James Riffle, Otter district, elevation 1,096 ft.

Boone County

Cambridge, 1 White and Hill, Scott district, elevation 755.8 ft.
Pond Fork, 17 fee, Crook district, elevation 850 ft.

Calhoun County

Hope Natural Gas, 6740 F. E. Rothlisburger, Sheridan district, elevation 1,124 ft.
South Penn Natural Gas, 5 J. S. Sharp, Sherman district, elvation 912.63 ft.

Jackson County

Godfrey L. Cabot, 11 and 13 Putnam Co., Ripley district, elevation 904.96 ft. and 1,016.26 ft.

Kanawha County

Godfrey L. Cabot, 12 Putnam Co., Poca district, elevation 968.51 ft.

Mingo County

Marrowbone Gas, 2 Waldron heirs, Kermit district, elevation 747.01 ft.

Nicholas County

Hamilton Gas, 2 Tri State, Hamilton district, elevation 2,334 ft.

Putnam County

R. C. Morton, trustee, 1 E. M. Callahan, Curry district, elevation 654 ft.
Curry, Kingery, 2 M. F. Mitchell, Curry district, elevation 750 ft.

Ritchie County

R. W. Richards, 2 fee, Grant district, elevation 835 ft.

Wayne County

Southern W. Va. O. & G., 27 and 28 B. J. Prichard, Union district, elevations 1,040 and 975 ft.
Clifford Mills, 2 J. F. Allen, Union district, elevation 892 ft.
United Carbon, 1 W. F. Toney, Union district.
Chartiers, 1 Albert Ronk, Butler district, elevation 799 ft.
Hamilton Gas, 1 Cornelia Blatt, Ceredo district.

Wetzel County

Carnegie N. G., 2 E. L. Glover, Grant district.
Carnegie N. G., 1 Mary A. Sole, Church district, to be deepened.

Wyoming County

Ravencliff Dev., 1 Gulf Smokeless Coal Co., Slab Fork district, elevation 1,508.65 ft.

SOUTHWEST PENNSYLVANIA

Clarion County, Monroe Township: Owen Illinois, 1 P. M. Smathers, 100,000 cu. ft., Thirty Foot sand at 1,268 ft.

Clarion County, Porter Township: Cottage Hill Gas, 1 E. M. Reitz, 60,000 cu. ft. from the Hundred Foot and Bradford sands. T.D. 3,080 ft.

Greene-Fayette-Washington

Greene County, Jackson Township: A. V. Lewis et al, 1 Smith and Pethtel lease (Guy Lemons), 1,391,000 cu. ft., Big Injun and Fifty Foot sands, 2,950 ft.

Washington County, Amwell Township: Carnegie Natural Gas, 1 M. E. McCollum, 230,000 cu. ft., Salt sand at 1,350 ft.

Deep Tests

On Chestnut Ridge in South Union Township, Fayette County, New Penn Development Co., William E. Snee and others deepened No. 2 Summit Hotel (Heyn) to 6,854 ft. and there lost the tools. The top of the Oriskany sand was at 6,834 ft. and the increase in gas from the Oriskany is about 200,000 cu. ft. a day and the total gage above 1,000,000 cu. ft. a day. In Maryland these operators are drilling at 6,886 ft. in the test on the Humberson farm on the Accident Dome in Garrett County. On Laurel Ridge in Stewart Township, Fayette County, Pennsylvania, these operators and E. G. Mueller are drilling at 7,673 ft. in the test on the Gregg L. Neel farm and the Onondaga is expected shortly.

Louisiana Gulf Coast

(Continued from Page 72)

North Crowley field: Humble, 3 Thevis, perf. casing 8,788-95 ft., 634 bbl., ¾-in. choke.

Beauregard Parish

Neale field: Atlantic, 2-B Rice, 8,403 ft., 450 bbl., ¼-in. choke.

Calcasieu Parish

Edgerly field: Emerson, 3 Yount Lee, 3,760 ft., dry.
Starks field: Burton, 2 Industrial, 6,665 ft., dry.

Cameron Parish

Chalkley field: Humble, 11 Hanszen, perf. casing 8,584-94 ft., 240 bbl., ¼-in. choke.
Sheil, 2 Sweet Lake, perf. casing 8,850-70 ft., 393 bbl., 10/64-in.
East Hackberry field: Harrison & Abercrombie, 2 Verdine, 7,858 ft., dry.
Gulf, 22-A Erwin, perf. casing 6,170-79 ft., 224 bbl. net, ⅞-in. choke.
Texas, 30 State, perf. casing 7,210-36 ft., and 7,276-88 ft., 195 bbl., ¼-in. choke.
Grand Lake field: Amerada, 7 State, perf. casing 8,392-8,402 ft., 263 bbl., 22 hours, 5/32-in. choke.
West Hackberry field: Stanolind, 31 Gulf Land fee, 8,198 ft., dry.

East Baton Rouge Parish

University field: Sugarfield, 1 Lerner Com., 6,775 ft., 243 bbl., 10/64-in. choke.

Evangeline Parish

Ville Platte field: Continental, 8 Opelousas, perf. casing 8,944-67 ft., 178 bbl., ⅞-in. choke.
Continental, 1 Ed Tate, 8,942 ft., 74 bbl., 19 hours, ⅞-in. choke.

Iberia Parish

Fausse Point field: Sun, 3 Cling ¾ Walet, perf. 620-30 ft. and 672-82 ft., 80,000 cu. ft. gas.
New Iberia field: Helis, 1-H Sabatier, 1,269 ft., 122 bbl., 14/64-in. choke.

Jefferson Davis Parish

South Jennings field: Stanolind, 1 Adams, 8,670 ft., 16.08 bbl. distillate, ⅛-in. choke.
Stanolind, 1 Atwell, perf. casing 8,812-42 ft., 13.39 bbl., ¼-in. choke.
Stanolind, 1 Hebert, 9,667 ft., dry.
Woodlawn field: Union Sulphur, 1 Miller, perf. 9,593-94 ft., 120 bbl. net, 20/64-in. choke.
Wildcat: Naylor, 1 Acadia, perf. casing 9,700-11 ft., 5 bbl. net per hour, ⅛-in. choke.

La Fourche Parish

Golden Meadow field: Brown & Wood, 1 Lefont, perf. casing 5,431-52 ft., 234 bbl., ¼-in. choke.
McMurray, 1 Daize Cheramie, 5,590 ft., dry.
Texas, 16 Falgout, 5,175 ft., 194 bbl., ⅞-in. choke.
Texas, 13 L.L.&E., 7,207 ft., 260 bbl., 5/32-in. choke.
Chacahoula field: Sun, 8 Dilbert-Stark-Brown, perf. casing 6,320-45 ft., 6.76 bbl. per hour, 10/64-in. choke.
La Fourche Crossing field: Lisbon-Iberia, 1 Prosper Thibodeaux estate, perf. casing 10,070-87 ft., 95 bbl. distillate, 12/64-in. choke.

Iberville Parish

Bayou Blue field: Markley & Crosby, 3 Baist, 1,601 ft., 6 bbl. hour, ¼-in. choke.

Plaquemines Parish

Grand Bay field: Gulf, 8 State, 8,112 ft., 300 bbl., 5/32-in. choke.
Quarantine Bay field: Gulf, 18 State, perf. casing 8,561-70 ft., 454 bbl., ⅞-in. choke.
Gulf, 19 State, perf. casing 8,168-84 ft., 487 bbl., ⅞-in. choke.

Rapides Parish

Cheneyville field: Amerada, 11 Weil, 5,691 ft., 355 bbl., ⅞-in. choke.

St. Landry Parish

Port Barre field: Gulf, 16 Wilson & Cochran, perf. casing 5,210-22 ft., 1,050,000 cu. ft. gas, ⅛-in. choke.

St. Mary Parish

Charenton field: Commerce Oil, 1 Viguerie, 2,715 ft., dry.
Fifteen Oil, 1 Guiles, 2,710 ft., dry.
Pan American, 21 Robichaux, 1,260 ft., 74 bbl. net, gas lift.

Vermilion Parish

West Gueydan field: Magnolia, 2 Reese, 7,505 ft., dry.
Schooner Bayou field: Union Oil, 1 White, perf. casing 10,536-42 ft., 220 bbl., ¼-in. choke.

La.-Ark. Fields

(Continued from Page 77)

ARKANSAS WILDCATS

Clark County

J. H. Coker and J. P. Grieves, 1 C. McClellan, NW NW SE 11-20-21. Drlg. rd. and gr. sh. 1,442 ft.
W. S. King, 1 N. Ross, 640 ft. S, 359 ft. W, NE cor. S½ SW 3-10-21. S.D. 2,280 ft.

Columbia County

Berkshire, 1 H. C. Couch, C N 30-ac., SE SE 22-17-20. Drlg. rd. and gr. sh. 3,540 ft.
McAlester Fuel, 1 K. J. Sayers, NW NE 15-18-22. Drlg. rd. and gr. sh. 3,923 ft.
Placid Oil, 2-B J. W. Booth, SW SW 20-17-19. Set 9⅝-in. csg. 2,195 ft., W.O.C.
Tide Water Asso., 1 E. M. Hutcheson, CNL NE SE 16-18-19. Drlg. rd. sdy. sh. 7,997 ft.

Nevada County

Berry Asphalt, 1 W. E. Meadows, 4-14-20. 7-in. 1,173 ft., W.O. pumping unit.

Union County

Sam Sebersky, 1-B G. N. Jerry, SW SW 21-17-14. T.D. 2,916 ft., arranging make D.S.T. 2,896-2,916 ft.

Closely Watched Missouri Test Shows Discouraging Results

By
DAL DALRYMPLE

ST. JOSEPH, Mo., July 29.—Missouri's most promising-looking wildcat well remained an unknown quantity as mishaps and water intrusion delayed a conclusive test. Brin & Nathan, 1 Decker, in NW NW 1-61n-38w, Holt County, 5 miles east of Mound City, had a showing of free oil on July 18, but since that time one thing and another has happened.

Corrected total depth is 2,303 ft., and the showing extends down from 2,297 ft. As underreaming began to shut off water coming from the 2,270-ft. level, operators plugged back the hole 11 ft. with limestone; 7-in. pipe was dropped and set at 2,292 ft. Meanwhile a bailer and the underreamer had to be fished out and finally an underreamer lug fell into the hole, this being allowed to stay. Plug was drilled Saturday night in about a 16-hour operation and water intrusion developed, the well collecting 4 to 5 bailers in 2-hour periods, presumably because a shutoff had not been effected.

No free oil was evident when plug was drilled. Operators gave the order to cement the pipe preparatory to testing. The thought was advanced that in 10 days' time the 2,200 ft. of water in the hole could have forced back the showing and that it would be several days before the outcome of the well would be known.

On the strength of the showing leasing has been resumed in Holt County and several drilling deals are three-fourths completed. Naturally, some of these depend on the success of the Brin & Nathan well.

Another Missouri well is fighting for a water shutoff in order to get a look at Viola lime. This is the Chillicothe Syndicate, 1 Linton in W½ SE 15-56n-23w, Livingston County. The lime was topped at 916 ft. and 6-in. pipe was set at 1,012 ft., but a shutoff had not been established.

State Bonus Won

Nebraska ended a week in which three dry holes were announced with the news that the Pawnee Royalty Co. had qualified for the $15,000 state bonus. No. 1 Bucholz in NW SW 17-1n-16e, Richardson County, had produced 10,180.32 bbl. from May 29 to July 27, an average of 169.5 bbl. daily. As official inspectors watched, the well made the 60-day run and produced the required minimum of 50 bbl. daily. Seldom has the well been allowed to flow full strength. It flows at the rate of 332 bbl. daily from Hunton lime when opened up. Market facilities have yet to be worked out for the Falls City pool. Thus far the Searle Petroleum Co. refinery at Omaha, a small plant, has been the only outlet. Talk of a refinery at Falls City is expected to bear fruit soon.

No. 1 Bucholz is the third well drilled by the Pawnee Royalty Co. No. 1 Boice, the first, was the discovery well. No. 1 Meyer, 1¾ miles to the southwest was a dry hole. The bonus will be paid to W. A. Guinn and B. G. Guinn, brothers managing the firm from Odessa, Tex., next January. No appropriation has been made by the state legislature.

One of the three dry holes of the week was announced by the Pawnee Royalty Co. Its No. 1 Zentner, a mile northeast of No. 1 Boice, in NE SE 8-1n-16e, made too much water in Hunton lime topped at 2,388 ft. and cored at 2,414 ft. to be profitable. Water percentage was about 85. Ed V. Jackson of Atchison, Kans., and Chester Carlock of Wichita, Kans., abandoned their No. 1 Holt a mile north of Falls City in SW SW 35-2n-16e, Richardson County. Hunton lime was topped at 2,485 ft. and drilled to 2,503 ft. There was no saturation. Three-quarters of a mile northwest of Salem in Richardson County Hayden Campbell of St. Joseph, and L. H. Sparks of Sparks, Kans., pronounced their No. 1 Horton dry and abandoned in NE NW 5-1n-15e. Hunton, cored at 2,672 ft., showed no saturation. Viola lime was topped at 3,372 ft., and drilled to 3,398 ft., also with no saturation.

E. J. Shaffer and Fred Rust of Hutchinson, Kans., are drilling below 1,860 ft. in their No. 2 Boose, SE NW 16-1n-16e. No. 1 Boose in NE NW 16-1n-16e, has rig standing, but has not spudded.

Two new locations were announced this week in Richardson County. R. L. Campbell of St. Joseph farmed out a 23-acre lease from Phillips Petroleum Co. and made a contract with E. J. Shaffer for a rotary test in Lot 4, 20-1n-16e. This No. 1 William A. Schock will require offsets by the Ohio, Skelly and the Pawnee Royalty companies if it is successful. Rig is going in. M. J. Lewis of Houston, Tex., who drilled the recent producer for the Uhrl Oil Co. 4 miles west of Salem, has announced a location about 1¼ miles southeast of that well. His No. 1 Charles Wittwer will be in NW NE 22-1n-14e, a rotary test.

MISSOURI

DeKalb County

American O. & G., 1 Thompson....SW SW 30-58n-31w Drlg. 1,175 ft.

Holt County

Brin & Nathan, 1 Decker.....NW NW 1-61-38w Miss. 1,865 ft.; Huntn. 2,211 ft.; sat. 2,297-2,303 ft.; tstg. T.D. 2,303 ft.

Livingston County

Chillicothe Syndicate, 1 Linton.....W½ SE 15-56-25w T. Viola 916 ft.; set 6-in. at 1,012 ft.; water.

NEBRASKA

Nemaha County

Sonken-Galamba, 1 Ord.....NW NW 8-5-14 S.D. 380 ft.
Sonken-Galamba, 1 Lehr.....SE SE 25-5-14 Drlg. 1,160 ft.

Otoe County

H. A. Risk, 1 McCord.....NW SW SW 15-8-14 Drlg. 660 ft.

Richardson County

Uhrl Oil, 1 Ogle.....NE NW SE 9-1n-14e Hunton 2,255 ft.; S.O.; T.D. 2,260 ft.; P. 380 B.F. P.D.; est. 65 per cent wtr.

KANSAS

During a quiet week in Kansas, the South Sittner pool got a ¾-mile south extension as the Stanolind, 1 Ahnert, W½ SE NE 10-22-12w, came in for 268 bbl. after two acid treatments in the Arbuckle lime at 3,630-35 ft.

In the Forest City basin, S. W. Forrester's wildcat, CSL NW 35-12-20, Douglas County, is drilling ahead in the Mississippi lime after getting shows in the Pennsylvanian at 657-62 ft. and 720 ft. Present depth is 1,229 ft.

Estimated Daily Production

Estimated daily production for Kansas for the week ended July 27, and for the preceding week, was as follows:

	Barrels	
	July 27	July 20
Oxford City	750	750
Burrton	7,900	7,650
Ritz-Canton	3,650	3,600
Graber	2,550	2,200
Hollow-Nikkel	1,650	1,650
Lerado	350	600
Voshell	1,750	1,700
Wellington	1,800	1,750
Ellsworth County:		
Lorraine	1,600	1,700
Other pools	3,165	3,245
Rice-Barton counties:		
Bloomer	3,700	4,650
Chase	4,450	4,850
Geneseo	3,200	2,600
Raymond	1,150	750
Silica	14,000	13,100
Keesling	750	450
Wherry	3,700	3,450
Miscellaneous Rice	930	4,355
Miscellaneous Barton	9,225	10,160
Trapp district	13,250	15,150
Balance Russell County	18,450	19,800
Sedgwick County	3,200	3,300
Ellis County:		
Bemis	12,950	10,450
Miscellaneous	7,725	11,005
Kingman County	855	980
Stafford County	12,445	11,165
Greenwood County	8,200	8,250
Eldorado	7,300	7,400
Other fields	35,555	33,240
Total Kansas	186,200	189,950

Barton County

Trapp field: Cities Service, 4 Bauman, S½ SE SW 6-16-13w. 3,000 bbl., T.D. 3,353 ft.
Sinclair Prairie, 6 Hoffman, NW NW NE 7-16-13w. 1,789 bbl., T.D. 3,352 ft.
Silica field: Stanolind, 15 Schartz, W½ 2-20-11w. 1,651 bbl., T.D. 3,292 ft.
Wolf pool: Derby, 1-A State River Bed, WL NE SE 36-19-12w. 360 bbl., acid, Arbuckle, T.D. 3,368 ft.

Butler County

A. J. Becker, 1-A Balzer, SE NE SW 32-26-6. 25 bbl., T.D. 2,775 ft.

Cowley County

Hittle field: A. Brewer et al, 2 Starkey C, SW SE SE 16-30-4. 335 bbl., T.D. 2,799 ft.

Ellis County

Burnett field: Phillips, 5 Sites, NE NW SW 12-11-18w. 3,000 bbl., T.D. 3,365 ft.
Wildcat: Gulf, 1 Arnold, N½ NE SE 36-13-17w. Dry, Sooy 3,503 ft., Arbuckle 3,541 ft., T.D. 3,604 ft.

Ellsworth County

Stoltenberg field: Derby, 1 Schepman, E½ SE NW 16-16-10w. 3,000 bbl., T.D. 3,348 ft.
North Stoltenberg pool: Herndon, 1 Noventy, NE NE 18-16-10w. 423 bbl., Arbuckle 3,405 ft.
Bloomer field: Skelly, 7 Moran, S½ NE SE 31-17-10w. Dry, T.D. 3,564 ft.

Greenwood County

Wildcat: Rex & Morris, 1 Jahren, NW NE SE 29-25-8. Top Mississippi lime 2,677 ft., set 7-in. casing, slight show of oil 2,680-82 ft., water 2,708 ft., T.D.

McPherson County

Bornholdt field: Tulsa Oil, 2 Mattson, N½ SE SW 19-20-5w. 1,848 bbl., T.D. 3,341 ft.
Tulsa Oil, 4 Mattson, N½ NW NE 30-20-5w. 3,000 bbl., T.D. 3,327 ft.
J. E. Crosbie, 2 A. E. Briggs, E½ NW SE 20-20-5w. Swabbed 35 bbl., Mississippi lime, T.D. 3,398 ft.
Hartman, 2 Swanson, N½ SW SW 18-20-5w. 51 bbl., Mississippi lime, T.D. 3,350 ft.

Reno County

Burrton field: T. Palmer, 2 Goering, S½ NW SE 1-23-4w. 450 bbl., T.D. 3,360 ft.

Rice County

Chase field: Cities Service, 2 Purcell A, S½ NE SE 28-19-9w. 1,883 bbl., T.D. 3,221 ft.
Gulf, 2 Kasselman, N½ SE SW 23-20-11w, 1,983 bbl., T.D. 3,279 ft.
Bornholdt field: Westgate-Greenland, 2 Johnson, N½ SE SE 24-20-6w. 3,000 bbl., T.D. 3,333 ft.
Wildcat: Republic Nat. Gas, 1 Bean, E½ NE SW 23-19-6w. Dry, T.D. 3,299 ft.

Russell County

Gorham field: Central Pet., 2 Mills, S½ S½ SW 34-13-15w. 693 bbl., T.D. 3,314 ft.
Wolf Creek, 6 Roubeck B, E½ SW NW 15-14-15w, 1,710 bbl., T.D. 3,264 ft.
Big Creek field: Aylward, 1 R. West, SE SW SE 30-14-14w. 875 bbl., T.D. 3,264 ft.
Gurney field: Stanolind, 2 Bond A, E½ E½ SW 23-14-13w. 420 bbl., T.D. 3,174 ft.
Skelly, 1 G. C. Ehrlich, S½ SW SW 32-14-13w. 1,542 bbl., Lansing-K.C., T.D. 2,915 ft.
Trapp field: Mid-Continent, 5 Ochs, S½ S½ NE 35-15-14w. 2,164 bbl., T.D. 3,348 ft.
Carter, 11 Detrich, N½ SE SE 8-15-13w. 430 bbl., Lansing-K.C., T.D. 2,977 ft.
Southern, 5 Sellens heirs C, E½ NE SE 29-15-13w. 3,000 bbl., T.D. 3,340 ft.
Sellens field: Cities Service, 2 Eafield, SE NW NW 22-15-13w. 528 bbl., T.D. 3,322 ft.

Stafford County

Henderson, 1 Schneider, NW SE SW 9-23-13w. 15 bbl., T.D. 1,776 ft.
Zenith field: Stanolind, 8 Ferris B, E½ W½ NW 23-24-11w. 571 bbl., T.D. 3,834 ft.
Wildcat: Stanolind, 1 L. Ahnert, W½ SE NE 10-22-12w. 268 bbl., 500 and 1,150 gal. acid, Arbuckle 3,630-35 ft.

Sedgwick County

Robbins field: Polhamus, 1 Garetty, SE SW NW 16-28-1. 20 bbl., T.D. 3,099 ft.

Stevens County

Hugoton field: Panhandle Eastern, 1 Sharp, NE NE NE SW 36-32-39w. 30,000,000 cu. ft., T.D. 2,573 ft.

WILDCAT DRILLING REPORT

Barton County

Jack Robertson et al, 1 Miller....WL SW NE 4-16-14w Neva 2,200 ft., set 8-in. at 2,733 ft., Topeka 2,816 ft., drlg. at 2,855 ft.
C. L. Carlock et al, 1 Hammer....NL NE NW 35-19-12w Topeka 2,650 ft., Lansing 3,105 ft., Arbuckle 3,347-50 ft., cemented 5-in. 3,347 ft., rigging up standard tools 3,350 ft.

Cowley County

W. M. McKnab, 1 McKown.....NE NE SW 31-33-5 Set 10-in. at 1,934 ft., underreaming, T.D. 2,202 ft.

Douglas County

S. W. Forrester et al, 1 Altenbernd...SL NW 35-12-20

(Continued on Page 95)

Mississippi Play Extends as Tests Show Structure

By GEORGE WEBER

JACKSON, Miss., July 29.—Mississippi interest has taken an upturn on the staking of new wildcats, well regarded by geologists and operators in the district. A few of these new tests are already approaching critical depths and are being closely watched. The failure of the state's most promising current test in Scott County did not cool interest as much as had been expected, in view of the new operations.

Leasing in Mississippi is still declining, as is geophysical shooting. The lease play has definitely moved to the east, where it is centered along the southern tier of Alabama counties, and has extended as far east as Florida. During the past week approximately 61,000 acres figured in new leases and transfers in Mississippi, while a total area exceeding 315,500 acres was leased in Alabama. Much of the acreage taken in the latter state is in large blocks, and terms on many transactions are not known. It is believed that the play can be explained as a cheap leasing play, with both majors and independents active in taking acreage on the basis of continued interest and rising prices to be expected when drilling follows. Geophysical activity in Mississippi again declined, with approximately 56 crews shooting mostly in east central and central counties of the state. Alabama, on the other hand, is seeing increased geophysical prospecting, with over 10 crews now in the state.

Wildcatting

Of the several wildcats drilling in Mississippi at present, four are singled out by geologists as good prospects. These tests have been staked with more geological and geophysical information than most others, and their chances of finding new production are considered well above the average for Mississippi. In Montgomery County, Gulf, 1 Fred Parker, in 22-19n-7e, is drilling ahead below surface casing on what is considered a large structure.

In Madison County, W. G. Ray, 1 Haffey, 7-10n-5e, is another well-regarded test, and is also drilling below surface casing. In Yazoo County, the Kingwood, 1 Shipp, 4-10-1e, is already running high on the chalk in which it is drilling below 4,885 ft., and this well will be the most closely watched test in the area during the next several days.

To the south in Perry County, Fohs, 1 Bond Lumber Co., 17-1s-11w, is reported to be running high on the Midway. Information is not being released by the operators, and it is doubtful that the information is authentic.

The Pickens field of Yazoo County is of current interest, with four tests drilling in the general area around it. To the south and west outpost tests are under way by Exchange Oil Co. and Kingwood Oil Co., and to the southeast a ¾-mile outpost test is staked. An important wildcat, staked by Ralph A. Johnston on the Locke School Land, across the line in Madison County and 3 miles southeast of Pickens, is also drilling below surface casing. This test is located in a large block. Whether the area is considered to be an extension of Pickens or a separate structure is a point of disagreement, but the latter supposition is most generally accepted. The outcome of this test, as well as the results of those tests drilling closer to Pickens production, will show much regarding the probable extent of the field.

Tinsley remains quiet from the standpoint of drilling. Crude from the field is now being run to Vicksburg in addition to shipments to Mobile and Baton Rouge for refining. The Vicksburg refinery of E. C. Johnston is making test runs and will be on full capacity production shortly, providing Tinsley with an additional 4,000 bbl. of outlet.

MISSISSIPPI COMPLETIONS

Tinsley—Yazoo County

Union Producing, 4 J. M. Twiner, NE NW 1-10-3, 140 bbl., 10/64-in. choke, casing pressure 600 lb., tubing pressure 560 lb., perf. 5,468-78 ft., may be Lammons or other new sand.

MISSISSIPPI

Hinds County

Harvey Robinson and J. P. Frame's No. 1 Alford, SW SE Sec. 18-6n-1e. Set 10¾-in. csg. 750 ft.; D.S. stuck 3,094 ft.; rec. all but 200 ft.; S.D.W.O.

Holmes County

L. A. Hawkins' No. 1 B. W. Humphrey, 1,980 ft. S, 330 ft. W NE cor. Sec. 33-13n-2e. T. chalk 4,014 ft.; T.D. 4,908 ft.; whipstocking by 800-ft. D.S.

Jefferson Davis County

J. W. Richardson's No. 1 M. Berry, C SW NE Sec. 15-9n-19w. Drlg. chalk 7,078 ft.

Jones County

T. N. Smith's No. 1 Hollifield, NW SW NW Sec. 20-8n-12w. M.I. rig.
R. W. Williams' No. 1 Eastman-Gardner, NE SW Sec. 7-8n-12w. Drlg.

Kemper County

R. E. Manning's (Crabb et al) No. 1 W. T. Caldwell, NW SE Sec. 25-9n-15w. 10¾-in. csg. 86 ft.; set 6-in. csg. 1,320 ft.; cd. 3,265-72 ft.; rec. 2 ft. tight sd.; very slight S.O.&G.; S.D. 3,300 ft.
R. M. Crabb et al's No. 1 Land, NW NE Sec. 12-10n-14e. Spdd. with port. rig; R.U.

Madison County

Ralph A. Johnston's No. 1 J. W. Locke School Land, NE NE Sec. 16-11n-3e. Set 10¾-in. csg. 610 ft.; W.O.C.
Owen & Fraim's No. 1 Talmadge, SW NE Sec. 22-11n-3e. Loc.
W. G. Ray's No. 1 Haffey, C Lot 1, SE SE Sec. 7-10n-5e. Set 10¾-in. csg. 510 ft.; W.O.C.
Stanolind Oil & Gas Co.'s No. 1 Higginson, C W½ SW Sec. 10-11n-5e. Set 10¾-in. csg. 583 ft.; drlg. chalk 4,023 ft.

Monroe County

W. O. Allen's No. 1 J. C. Palmertree, C NW SW Sec. 30-17-7e. Loc.
Willmut Gas & Oil Co.'s No. 1 Rye, 300 ft. N and E C Sec. 22-15n-17e. Set 10¾-in. csg. 625 ft.; drlg. hd. slate 2,393 ft.

Montgomery County

Gulf Ref. Co.'s No. 1 Fred Parker, SE SW Sec. 22-19n-7e. Set 9⅝-in. csg. 849 ft.; drlg. ahead.
E. R. Henderson's No. 1 Columbian Mutual Life Ins. Co., Sec. 36-21-5e. Set 10¾-in. csg. 250 ft.; S.D.

Neshoba County

J. P. Evans' No. 1 Mary Oliver, C SW Sec. 18-9n-13e. Set 10¾-in. csg.; drlg. 512 ft.

Perry County

Fohs Oil Co.'s No. 1 Bond Lbr. Co., 907.5 ft. N, 660 ft. W, C Sec. 17-1s-11w. Set 10¾-in. csg. 1,651 ft.; drlg. 5,997 ft.

Prentiss County

Home Dev. Co.'s No. 1 Mrs. A. Allen. Sec. 8-7s-9e. Drlg. 1,917 ft.

Scott County

E. L. Martin's No. 1 Newell Mineral Lse. Co., 660 ft. W, 330 ft. S, NE cor. Sec. 5-6n-7e. Set 9⅝-in. csg. 803 ft.; cd. 4,902-20 ft.; rec. sd., sdy. sh., salty taste. T.D. 6,510 ft.; no show; to drill to 7,500 ft.

Tallahatchie County

I. P. Lerew's No. 1 L. Westbrook, SE SE Sec. 18-23n-2w. R.U.

Yazoo County

Barnsdall Oil Co.'s No. 1 T. R. Woodruff, NW NW Sec. 6-10-2. Loc.
Joe Dawson's No. 1 J. W. Mullican est., C NW NW Sec. 19-11n-3w. Tent. loc.
Edward DeLoach's No. 1 Wilburn, Sec. 6-12n-3w. Loc.
Leon Dunn's No. 1 H. H. Pepper, Sec. 26-12n-2e. T.D. 4,943 ft.; stuck Schlumberger tool; S.D. (cor.).
Exchange Oil Co. and Kingwood Oil Co.'s No. 6 Wilburn, 1,320 ft. S, 440 ft. W NE cor. Sec. 31-12-3. R.U.
Exchange Oil Co.'s No. 5 Wilburn, 440 ft. S, 220 ft. E, NW cor. Sec. 31-12n-3e. Set 10¾-in. csg. 449 ft.; drlg. bl. sh. 3,856 ft.
Kiran Oil Co.'s No. 1 J. J. Milner, 665 ft. S, 682 ft. E, NW cor. Sec. 7-10n-2w. Loc.
Hassie Hunt's No. 2-B Lammons, C NE NE Sec. 1-10-3. T. Perry sd. 5,345 ft.; set 7-in. csg. 5,425 ft.; W.O.C. 5,470 ft.
Hassie Hunt's No. 3-B Lammons, C SE SE Sec. 36-11n-3w. R.U.
E. C. Johnston's No. 5-B Brumfield, C NW SE Sec. 2-10-3. R.U.
Kingwood Oil Co.'s No. 1 P. P. Shipp, 440 ft. W, 1,320 ft. S, NE cor. SW Sec. 4-10n-1e. Set 10¾-in. csg. 537 ft.; drlg. chalk 4,893 ft.
Magnolia Pet. Co.'s No. 1 Milner, C NW NW Sec. 7-10-2. Loc.
Peterson Pet. Co.'s No. 1 School Land, Sec. 16-10n-2e. Loc.
Rowan, Hope & Thompson's No. 1 Cook, 440 ft. S, 330 ft. E NW cor. Sec. 6-11n-3e. R.U.
Union Prod. Co.'s No. 3 Cesana, 549 ft. N, 1,933 ft. E, SW cor. Sec. 18-10-2. Set 10¾-in. csg. 641 ft.; drlg. chalk 4,683 ft.
Union Prod. Co.'s No. 1 Powell, C SE SW Sec. 36-11-3. Set 10¾-in. csg. 646 ft.; W.O.C. 900 ft.
Union Prod. Co.'s No. 5 Twiner, 2,019 ft. S, 2,118 ft. W, NE cor. Sec. 1-10-3. T.D. 4,105 ft.; fsg. 3,275 ft.

ALABAMA

Franklin County

E. O. Heath's No. 1 W. O. Hester, SW SW Sec. 4-6s-12w. R.U.C.T.

Lawrence County

Mid-Southern Pet. Co.'s No. 1 Jackson, NE NE Sec. 30-7s-6w. Set surf. csg.; drlg. 1,106 ft.; no report.

Marion County

Seaboard Oil Co.'s No. 1 Clark et al., 360 ft. W, 660 ft. N, SE cor. SE SW Sec. 28-11s-14w. Shot 638-45 ft. with 190 qt. nitroglycerin; crooked hole; skdd. over; drlg. 1,375 ft.; no report.

Mobile County

Tom Daly et al's No. 1 Fort, NW cor. SE SE Sec. 2-6s-4w. S.D. 6,518 ft.; will deepen to 8,500 ft.

Walker County

Champlin O. & R. Co.'s No. 1 Galloway Coal Co., Sec. 12-13s-10w. Set 12-in. csg. 1,100 ft.; drlg. 1,127 ft.

WILDCAT OPERATIONS

For the greater convenience of our readers, the reports on drilling wildcats and other important wells will be found in the sections devoted to field reports.

LEGAL

U. S. Department of the Interior, General Land Office, Washington, D. C. Sale of oil and gas leases in Oklahoma. Notice is hereby given that leases of the oil and gas deposits in the following lands in the known geologic structure of the Red River oil field, Oklahoma, defined October 18, 1928, are offered to the responsible qualified bidder of the highest bonus per acre pursuant to the provisions of section 17 of the leasing act of February 15, 1920 (41 Stat. 437), as amended by the act of August 21, 1935 (49 Stat. 674), at the royalty rate scale in the lease form shown in Circular 1386, at a sale to be held in the office of the Geological Survey, Post Office Building, Ardmore, Oklahoma, at 10 o'clock A. M. on August 21, 1940: Unit No. 1: Beginning at a point in the river bed, South 61° 35′ E., 117.40 chains from the Texas-Oklahoma Boundary Survey reference Monument, "North Range Line, 15/14," which is 45.4 links south of the corner of Secs. 1, 6, 7, and 12, T. 5 S., Rs. 14 and 15 W., Ind. Mer., Oklahoma, thence in the river bed, along the East boundary of the Lone Star (upper tract) south 17.50 chains, to the Texas-Oklahoma boundary and the S.E. corner of the Lone Star (upper tract); thence along the boundary North 40° 09′ E., 3.60 chains, North 44° 06′ E., 3.13 chains, to the West boundary of the Burke Divide Lease (middle lease); thence in the river bed, along the West boundary of the Burke Divide Lease (middle lease) North, 12.50 chains, to a point which is the N.E. corner of the Corts Drilling Company and a common corner to the Burke Divide Lease (middle lease); thence in river bed, along the South boundary of the Burke Divide Lease (middle lease) West, 4.50 chains, to place of beginning, containing 6.7 acres. Unit No. 2: Beginning at a point on the north line of the Sam Sparks Survey, South 49° 49′ E., 104.63 chains from the Texas-Oklahoma Boundary Survey reference monument, "North Range Line 15/14," which is 45.4 links south of the corner of Secs. 1, 6, 7, and 12, T. 5 S., Rs. 14 and 15 W., Ind. Mer., Oklahoma, thence along the north line of the Sam Sparks Survey South 60° 04′ W., 18.77 chains, South 76° 15′ W., 4.00 chains, to east boundary of the Burke Divide upper permit; thence in river bed along the boundary of the Burke Divide upper permit, South 2.08 chains, East 20.15 chains, to the Southwest corner of the Burke Divide upper lease; thence in the river bed along the west boundary of the Burke Divide upper lease, North 12.40 chains to place of beginning, containing 13.5 acres. Unit No. 3: Beginning at the NW cor. of the Melish lower permit, Guthrie 014088. Thence N. 12° 30′ W., 2.15 chains, more or less, to the medial line of Red River. Thence following the medial line, southwesterly, 26.20 chains, approximately, to the east bdy. of the Mutual lease. Thence along the east bdy. of the Mutual lease, S. 12° 30′ E., 0.90 chains, more or less. Thence along the bdrs. of the Melish middle lease, N. 57° 30′ E., 6.38 chains, N. 76° 30′ E., 5.95 chains, S. 12° 30′ E., 38.00 chains, more or less, to the Texas-Oklahoma Bdy. Thence along the said State bdy. line, easterly, 34.00 chains, more or less, to a point. Thence N. 8° 00′ W., 1.00 chain, more or less, to the SE cor. of the Melish lower lease. Thence along the bdrs. of the Melish lower lease and permit, S. 76° 00′ W., 19.78 chains, N. 12° 30′ W., 40.00 chains, to the place of beginning, containing approximately 64 acres, subject to variation arising from changes in the position of the medial line and of the south bank of the river since December 31, 1923. Unit No. 4: Beginning at the SE cor. of the Melish lower lease, Guthrie 014088. Thence S, 8° 00′ E., 1.00 chain, more or less, to the Texas-Oklahoma Bdy. Thence along the said bdy., northeasterly, 68.00 chains, more or less Thence, west, 21.00 chains, more or less, to the east bdy. of the Patterson lease. Thence along the bdy. of the Patterson lease, south 10.00 chains, to the SE cor. of the Patterson lease, west 17.50 chains, to the SW cor. of the Patterson lease, north 22.80 chains, to the NW cor. of the Patterson permit. Thence north, 2.40 chains, more or less, to the medial line of Red River. Thence along the medial line, southwesterly, 46.00 chains, more or less, to the east bdy. of Unit No. 3. Thence S. 12° 30′ E., 2.15 chains, more or less, to the NW cor. of the Melish lower permit. Thence along the bdrs. of the Melish lower permit and lease, N. 76° 00′ E, 20.00 chains N. 52° 30′ E., 3.45 chains, S. 8° 00′ E., 41.55 chains, to the place of beginning, containing approximately 150 acres, subject to variation arising from changes in the position of the medial line and of the south bank of the river since December 31, 1923. Two or more units may be consolidated in a single lease to the same qualified bidder provided the acreage does not exceed the maximum prescribed by law. The successful bidder must deposit on the day of the sale a certified check on a solvent bank or cash for 1/5 of the amount of each bid and file the showing of qualifications to receive a lease, required by section 7 of General Land Office Circular 1386. The remaining 4/5, together with the annual rental in advance at the rate of $1 per acre must be paid, and a $5,000 corporate surety bond must be furnished prior to the issuance of the lease. The bidders are warned against violation of the provisions of section 59 of the United States Criminal Code approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. Commissioner, General Land Office.

Hoard
Exploration Co.
Seismograph Surveys
618 Esperson Bldg.
Houston - - Texas

North Texas Fields

(Continued from Page 70)

Hamilton, 6 Martin, 755 bbl., 3,718-39 ft.
Hanlon-Buchanan, Inc., 21 Fassett-Tuttle, 475 bbl., 4,101-37 ft.
Omohundro, 7 Jones, 640 bbl., 3,895-4,100 ft.
Omohundro, 4 Love, 660 bbl., 3,898-4,046 ft.

Wilbarger County

Wildcat: Amerada Pet., 1 Goodpasture, 241 bbl. in 8 hours, 3,230-52 ft., plugged back from 6,717 ft., total depth.
Consolidated field: Consolidated & Texas Eastern, 3 Ancell, junked at 4,067 ft.
South Vernon field: Lawson Leavell, 4 Waggoner, dry at 3,175 ft.

Young County

Olney field: Moran, 1 Howard, dry at 1,005 ft.
Wolf, 1 Brown, dry at 1,130 ft.
Graham field: Brader & Groves, 1 Clark, 19 bbl., 3,852-70 ft.
Wildcat: Commodore Oil, 1 Clinton, dry at 3,782 ft.

NORTH TEXAS WILDCATS

Archer County

Chapman & McFarlin, 7 Wilson, E. Hall Sur., Abst. 682. Topped Ellenburger 4,894 ft.; T.D. 5,091 ft.; P.B. 4,650 ft.; shot with 100 qt. 4,636-50 ft.; bailed good oil show; preparing to acidize.
W. H. Gant, 1 A. Vogtsberger, Sec. 3, G. E. Co. A-146 Sur.; 5,200-ft. test. O.S. 4,659-71 ft.; L.S.O. 5,257-69 (cd.) ft.; cmtd. 6⅝-in. at 4,651 ft.; swbd. 16 B.O. in 16 hrs.; flwd. 62 bbl. in 4 hrs. through csg. after being S.I. for 2 wks.; C.O. and tstg. with spudder.

Clay County

L. T. Burns, 1 Calloway, Lot 9, Hopkins County School Lands Sur., Abst. 176. O.W.D.D.; present T.D. 5,356 ft.; new contract depth 6,000 ft.
Deep Rock, 1 S. Dycus, Sec. 2602, T.E.&L. Sur., 3,600-ft. test. Drlg. 5,650 ft.
Horton & Wiggins, 1 W. J. Howard, Blk. 31, T. J. Belcher Sur. Drlg. 4,278 ft.
L. O. McMillan, 1 Tom Watson, Sec. 2620, T.E.&L. Sur. S.D. 3,760 ft.
Roberts, Lynch & Jones, 1 Edwards, Blk. 40, Madison County School Lands Sur.; 6,500-ft. test. First report.

Denton County

Amon G. Carter, 1 W. P. and A. P. Allen, S. Westbrook Sur. S.D. 4,000 ft.
Seitz, Comegy & Seitz, 1 F. Freeman, M.E.P.&P. Sur., Abst. 1470. S.D.O. 6,015 ft.

Hardeman County

Norris & Gilbert, 1 Robert Weekley, SW SE Sec. 87, Blk. 16, H.&T.C. Sur. Drlg. 3,540 ft.

Jack County

R. A. Conkling, 1 M. Hoofle, A. James Sur., Abst. 318, 3 mi. S Antelope; 3,500-ft. test. Drlg. 1,720 ft.

Montague County

Walter Gant, 1 Will Laird, R. T. Millard Sur., Abst. 470, 7 mi. W of Sunset. S.S.O. 4,857-77 ft.; cored conglomerate S.O. 5,650-61 ft.; cored shale 5,667-67 ft.; prep. take drill-stem test.
Hults & Owens, 1 Tucker, NW cor. Sec. 2836, T.E.&L. Sur. Hole spd.; R.U.R.
W. H. Peckham, 1 Dr. Lawson, N. Kimbro Sur., Abst. 405. Drlg. 5,920 ft.
Rathke Oil Co., 1 Moseley, J. Harrison Sur., Abst. 259. Drlg. 650 ft.

Throckmorton County

Normandie Oil Corp., No. 1 Travis, Sec. 37, Travis C.S.L. S.D. 3,895 ft.

Wilbarger County

Herbert Oil Co., 1 S. B. Peters. Drlg. 2,360 ft.

Young County

A. T. Strong, 1 Craig heirs, N. Lynch Sur. S.O. 4,225-40 ft.; saturation 4,720-30 ft.; S.D.O.

WEST CENTRAL TEXAS

FORT WORTH, Tex., July 29.—Concho County centered the attention in the West Central Texas district during the past week as completion attempts continued at a prospective field discovery by Floyd C. Dodson and associates. The operation is No. 1 Wilson, Block 1, Thomas Green Survey, 10 miles southwest of Eden, and is indicating the first commercial oil production for the county. Saturated lime was drilled from 3,752 to 3,754 ft., where operations were suspended about 10 days ago. Testing has recovered an estimated 300,000 ft. of gas daily and some oil. The latest report stated that oil had risen 1,356 ft. in the hole in 42 hours. Testing continued as the week closed.

Runnels County was given a deep wildcat location when A. J. Johnson of San Angelo received permit for his No. 1 Bert Fletcher, E. W. Bull Survey, about 3 miles southeast of Maverick. The test is contracted to 5,500 ft. and is scheduled for spudding before August 15.

Humble Oil & Refining Co. spudded a 3,300-ft. Palo Pinto lime wildcat in Shackelford County and 2 miles northeast of the 3,150-ft. Ivy field in the northwestern part of the county. The location falls in the SW Section 13, Block 3, H.&T.C. Survey, and is on the J. J. Simpson and J. F. Bean lands. It is ¾ mile south of a dry hole drilled last year by Jones & Stasney and Groover & Rose, and a mile southeast of a failure drilled by Ungren & Frazier about 2 years ago.

Limiting production in the small and shallow field opened several weeks ago just north of the Griffin field in Jones County, Hickok & Reynolds have abandoned No. 1 Dunlop, Section 192, B.B.B.&C. Survey, at a total depth of 1,730 ft. The discovery well, Jones & Stasney and Groover & Rose, 1 Humphrey, SE cor. SW Section 192, was completed for a small producer from a shallow sand at 1,700 ft. about a month ago. The failure did not encounter the pay sand of the discovery well.

Production will be sought on two sides of the recently opened Gunsight lime field in Jones County. J. E. Farrell, discoverer of the field, has staked location for No. 1 Matilda Kohler, NE Section 32, D.&D.A. Survey, northwest of the discovery. The other location is in the J. W. Reid tract and about ¼ mile southeast of the discovery. The operator's second producer on the Reid tract was completed as a west offset to the discovery well and drilled pay to a total depth of 2,583 ft. This was about 20 ft. below the total depth of the discovery, so the discovery was deepened to 2,590 ft. and found the additional pay.

WEST CENTRAL COMPLETIONS

(24-hour gages)

Brown County

Thrifty field: Mitcham Brothers, 6-C Newton, 2 bbl., 1,204-14 ft.
Sewalt gas field: Brewer, 1 Sewalt, 5 bbl., 903-943 ft.

Callahan County

Putnam field: Blosser, 1 Wylie, 5 bbl., 313-315 ft.
McCrea, 1 Isenhower, dry at 611 ft.
Miller & Ames, 1 Finley, dry at 687 ft.
Wildcat: Hinton, 1 Gilliland, dry at 1,092 ft.

Coleman County

Novice field: McKissick, 3 Morris, 342 bbl., 3,542-66 ft.
States Oil, 1 Coker, 163 bbl., 3,587-3,616 ft.

Eastland County

Wildcat: Jackson, 1 Norris, dry at 1,152 ft.

Jones County

South Leuders field: Gaston, 2 Davis, 24 bbl., 1,713-18 ft.
Higgs field: Yates & York, 1 Higgs, dry at 2,255 ft.
Lewis field: Venture Oil, 2 Bigham, 75 bbl., 1,909-15 ft.
Venture Oil, 3, Bigham, 37 bbl., 1,877-99 ft.
W. H. Peckham, 15 Brock, 145 bbl., 1,850-85 ft.
W. H. Peckham, 16 Brock, 126 bbl., 1,881-1,902 ft.
Sayles field: Condor Pet., 29 Sayles, 227 bbl., 1,922-45 ft.
Lewis Prod., 5-D Sayles, 359 bbl., 1,925-28 ft.
Wildcat: Merry Bros. & Perini, 1 Walker, dry at 2,180 ft.
Noodle Creek: Humble, 2 Huddleston, dry at 2,973 ft.

Palo Pinto County

Dalton field: Lloyd, 1 Edgin, dry at 1,506 ft.
Rector field: Palo Pinto Oil & Gas, 2 Rector, dry at 3,430 ft.

Shackelford County

Sedwick field: Roark, 9 Hickman, 25 bbl., 663-72 ft.
Roark, 1-A Hickman, dry at 699 ft.
Cook field: Roeser-Pendleton, 13-B-113 Cook, dry at 1,616 ft.
Roeser-Pendleton, 14-B-113 Cook, 89 bbl., 1,587-89 ft.
Jackson field: Ungren & Frazier, 2 Dyer, 151 bbl., 919-928 bbl.
Semiwildcat: Hickok & Reynolds, 1 Morris, 96 bbl., 1,509-12 ft.
Ivy field: Humble, 3 McCown, 135 bbl., 3,150-79 ft.

WILDCAT OPERATIONS

Brown County

F. Brittain, 1 G. R. McEnloe, 1,130 ft. NE, 300 ft. NW lines of J. Williams Sur. 33; 1,800-ft. test. Drlg. 40 ft.

Callahan County

N. D. Gallagher, 1 E. Grisson, SE pt. Sec. 2, Blk. 8, S.P. Sur. Fsg. tools 1,430 ft.
H. W. Lee, 1 Mrs. Murray Harris, SW cor. NW SW Sec. 99, B.B.B.&C. Sur.; 1,350-ft. test. T.D. 1,229 ft.; oil sd. 1,227-29 ft.; est. 30 B.O.P.D.; swedging csg. 1,229 ft.

Comanche County

C. D. Lane, 1 H. W. Strout, 3,080 ft. from N, 2,200 ft. from E lines of E. D. Corbett Sur., Abst. 154. Drlg. below 1,500 ft.

Eastland County

L. M. White, 1 W. H. White, NW pt. White tract in H. Kendrick Sur., 10 miles S of Ranger, first report.

Hamilton County

A. J. Caldwell, 1 W. W. Jones, 1,002 ft. from NE, 150 ft. from SE lines of W. H. Crowder Sur. S.D.O. 3,010 ft.

Jones County

Best, 1 A. A. McDuff, 5,200 ft. S, 1,100 ft. E lines of J. J. Hughes Sur. 256. Drlg. 1,555 ft.

Palo Pinto County

Georgian, 1 J. K. Weldon, A. J. Smith Sur., Abst. 393; 2,500-ft. test. S.D.R. 1,000 ft.
Fred Guyer, 1 Dalton, Dalton Sur., Abst. 153; 1,400-ft. test. T.D. 1,840 ft.; U.R. 8¼-in. csg. from 910 ft.

Parker County

Brown & Gardner Bros., 1 Gilbert, T.&P. Sur., Abst. 1958. Csg. set 3,905 ft.; est. 500,000 ft. gas and spray oil; S.D.R. 4,485 ft.
C. Leidecker and Wm. Holland, 1 J. A. Boyd, NE NE of S 100 ac. of A. J. Edwards Sur.; 4,500-ft. test. S.D.R. 2,410 ft.

Stephens County

J. R. Tolbert, 1 W. L. Martin, NW cor. NE¼ Blk. 1335, T.E.&L. Sur., 1½ mi. SW of Fagg area. Est. 30 B.O.P.D. at 3,985 ft.; S.D.O. 3,886 ft.

EASTERN TEXAS

DALLAS, Tex., July 29.—The East Texas district hit its lowest pace in weeks during the past seven days as only three new oil wells were gaged in the East Texas field and only one in the East Central Texas area. Locations hit a correspondingly low mark as only three were staked in the East Texas field and three in the East Central Texas fields, these being one each in Long Lake, Chapel Hill and Talco.

Wildcat operations headed the week's development as a new field was in the making in Camp County and three new wildcat tests were located in as many different counties. Camp County's new field prospect is the long shut-down Harry Moss, 1 Venters, S. Wright Survey, 3 miles southeast of Leesburg. A section of saturation was drilled in the Pettit lime about 3 months ago. The plug was drilled at that time but the well was never bailed out and tested. Machinery was moved to the site last week and bailing commenced. The well has not kicked off to make a flow as yet, but live green oil has been recovered on bailing and swabbing tests. The pay section was drilled from 7,947 to 8,043 ft. With a total depth of 8,087 ft. casing had been set at 8,085 ft. During the week the casing was perforated from 8,000 to 8,042 ft. and it is from this section that the oil is believed coming. The Pettit lime, which is the top of the Travis Peak formation of the Trinity series of lower Cretaceous, was topped at 8,060 ft. As the week closed swabbing and testing continued, commercial production believed possible by observers at the test.

Wildcat Locations

The north end of the East Texas basin was given a new deep operation when Plains Production Co., Dallas, Tex. (headed by D. Harold Byrd) and Hunter & Rowe, also of Dallas, let contract for an 8,500-ft. wildcat in Wood County and 4 miles northwest of Quitman. The operation is No. 1 Stanley I. Smith, staked on a 300-acre tract and spotted in the SE cor. of the Santiego Calderon Survey, on a 5,000-acre block. Geophysical surveys and subsurface correlations have been made on the block. Seeking production from all possible levels, the wildcat will first test the Woodbine sand expected at 4,300 ft., then the Paluxy at 6,000 ft. and the Glen Rose at 8,500 ft. The location is about 22 miles south and west of the Moss, 1 Venters, prospective discovery in Camp County.

A deep Trinity series wildcat was getting under way in Rusk County at a location announced by Kangerga Brothers and T. P. Cannon of Henderson. The test will be in the R. Lane Survey and drilling deal is being completed with Delta Drilling Co., Tyler. With the starting date not definitely announced nor the exact location made, the test is planned to be carried to 7,500 or 8,000 ft.

Efforts to deepen an old wildcat failure in Hopkins County were seen during the week when W. P. Vaughn of Tyler was granted permit to resume work at his No. 1 Mary Chapman, a mile north of Tira and on a 160-acre tract in the F. Hopkins Survey. Quit last March at a total depth of 3,064 ft., the new contract will carry it to the 6,000-ft. level.

EASTERN TEXAS COMPLETIONS

(One-hour gages)

Gregg County

Longview area: Cushing Drlg., 39-A Owens, 20 bbl., 3,645-53 ft.
T. D. Humphries, 11 Branson, 60 bbl., 3,577-89 ft.
Texas Co., 15 Woods, junked hole.

Upshur County

Longview area: B. F. Phillips, 3-C Everetts, 40 bbl., 3,581-83 ft.

EAST CENTRAL FIELDS

24-hour gages)

Anderson County

Long Lake field: Hunt Oil, 1 Anderson, 100 bbl., 5,328-40 ft.

WILDCAT OPERATIONS

Freestone County

L. F. Grey, 1 O. B. Utley, S. J. Claypool Sur., 4 mi. N of Fairfield. S.D. 1,540 ft.

Henderson County

E. B. LaRue, 1 R. H. Davis, E. G. Harris Sur., 3 mi. NE of Stockard. Top Austin 3,510 ft., S.D. 3,670 ft.

Kaufman County

T. G. Shaw, Tr., 1 Angus Wynne, B. S. Newman Sur., 8 mi. E. Kaufman, lower Trinity test. T. anhy. 5,934 ft.; T. Massive 6,123 ft.; B. Massive 6,255 ft. T.D. 6,454 ft.; milling on junk 6,454 ft.

Leon County

Alexander & Wilhite, 1 C. H. Mills, M. Copeland Sur., 2½ mi. E of Normangee. S.D. 527 ft.

Red River County

Joe White, 1 Kurth Lbr. Co., E. Smith Sur., near Allen Mill. Top Massive anhy. 1,560 ft.; drlg. below 1,700 ft.

Rusk County

J. S. Harrold, 1 M. J. Armstrong, M. D. Carmel Sur., 3 mi. SE Henderson. Top Massive anhy. 6,125 ft.; drlg. below 6,170 ft.

Upshur County

H. C. McGahey, 1 Ludie Turner, SE cor. 200-ac. tr. in A. Butler Sur. Moving in rig.

Personal Paragraphs

J. P. WARNER has been named to head a new division of the manufacturing department of Standard Oil Co. of Louisiana, to be known as the chemical products division, and will direct the manufacture of synthetic rubber and handle other chemical activities. Mr. Warner is the former head of the technical division, in which post he is being succeeded by H. J. VOORHIES.

MRS. JANE H. EASTMAN, dean of women for the general office of the Standard Oil Co. of Indiana, at Chicago, will retire on company annuity August 18. During the 17 years that Mrs. Eastman has been in the service of the company she has interviewed approximately 60,000 men and women who have come to her for employment and advice.

DR. DAN J. FOURRIER has been added to the Stanocola Employes Medical and Hospital Association staff.

WILLIAM FARRAR, geologist with Skelly Oil Co., has been transferred from Evansville, Ind., to Jackson, Miss.

J. DON WIET, district scout for Phillips Petroleum Co., has been elected "czar" of the Shawnee weekly check meeting.

M. L. CURTIS, Carter Oil Co., Tulsa, will present a paper at the A.P.I. evening meeting at Seminole on August 9 dealing with employe training.

AUSTIN ALLEN, assistant division superintendent for Phillips Petroleum Co. at Amarillo, Tex., and MISS ANNIE LEE McWILLIAMS, daughter of Mr. and Mrs. W. J. McWilliams of Plainview, Tex., were married June 14 at the bride's home.

O. D. ALLISON, who has been a member of the Los Angeles petroleum engineers office of Texas Co., has been transferred to the Signal Hill petroleum engineers office and will maintain offices at the headquarters of the company in Long Beach, Calif.

R. P. McLAUGHLIN, of Los Angeles, Calif., general manager of Dominguez Oil Field, Inc., has resigned and will enter private practice. HARRIS HAMMOND, president and son of John Hays Hammond, has moved from New York and will assume charge of the California office.

JOHN SURBER, formerly warehouse foreman for Sinclair Prairie Oil Co. at Seminole, has been promoted to the position of assistant construction superintendent. At present Mr. Surber is supervising construction of butane-propane equipment at Plant 13 in the Seminole field.

W. C. KNEALE, district manager of the Texas Co.; R. B. KELLY, district manager of Pure Oil Co.; CLARENCE T. SMITH, Pure Oil Co. attorney S. M. DEAN, Sohio Corp.; JAMES T. DAVIS, Texas Co.; H. K. O'GARA, Shell Oil Co., Inc.; A. E. CHESTER, district manager of Magnolia Petroleum Co.; G. D. FARRIS, Ohio Oil Co., and GEORGE TAYLOR, Continental Oil Co., last week served on the committee to make the Oil Men's Day celebration in Salem, Ill., a success.

J. H. PHELAN, Beaumont, Tex., oil man and philanthropist, was designated the city's most distinguished citizen of the year by the Rotary Club at a meeting last week. He was presented with a scroll commending him for his noteworthy service to the community.

R. W. THOMAS, who has been manager of the Philgas division of the Phillips Petroleum Co., with headquarters in Detroit, Mich., has been transferred to the Bartlesville, Okla., offices of the Phillips company. He will continue in general charge of the Philgas division. AL CAMERON, who has been assistant manager in Detroit, is now in charge of that office.

HENRY N. TOLER, president; URBAN HUGHES, vice president, and L. R. McFARLAND, member, of the Mississippi Geologists Association, were in Yazoo City, Miss., last week to confer with officials of the Mississippi Oil Exposition. The association has taken over conducting of educational features of the exposition which will be held late this month.

H. W. WYNN, geologist for Sinclair Prairie Oil Co., formerly in charge of its Shawnee, Okla., office, has been transferred to Youngstown, Ohio, following the closing of the district office at the former city. TOM GIRDLER, geologist for the company, has been transferred to the Wichita Falls, Tex., office. R. A. SMITH, district scout, will remain at Shawnee and cover the Greater Seminole and adjoining districts.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

Prairie Oil & Gas Co. posted an advance of 5 cents in the price of crude, making the present price 55 cents per barrel. This makes a total appreciation of 15 cents in a week.

Sec. Franklin K. Lane of the Interior Department announced that he would give a hearing upon terms to govern oil leases in the Osage Reservation and the rules and regulations thereunder.

Recent advances in quotations on gasoline from 10 cents to 13 cents by the Texas Co., Magnolia Petroleum Co., and Gulf Refining Co. are to be made the subject of an investigation by the attorney general's office, according to advices from Austin.

20 YEARS AGO

Natural gas will last only 25 years longer, and hardly that time unless the supply in conserved, according to an opinion expressed by Samuel S. Wyer, of the U. S. Bureau of Mines at the Natural Gas Conservation conference in Pittsburgh, Pa.

The Corporation Commission of Oklahoma has placed the manufacture of carbon black under a ban in its order against the sale of natural gas for the purpose of making carbon black.

10 YEARS AGO

The first oil through the new line of the Pure-Van Pipe Line Co. was received at Smiths Bluff, Tex. This is the eighteenth trunk line delivering oil to Gulf ports from fields outside the district.

"By running too much crude to their stills they not only created an artificial market for crude oil . . . but they also made it impossible to correct conditions within the refining industry itself." Editorial page.

G. R. HARRISON, land man with the Texas Co., has been transferred from Illinois to Shreveport, La.

SAMUEL VAUCLAIN, III, geologist with Sun Oil Co., has been transferred from Jackson to Hattiesburg, Miss.

ED RUMSEY, geologist at Amarillo, Tex., for Shell Oil Co., Inc., and his bride, are honeymooning in Colorado. Mr. Rumsey and the former MISS JEAN FISH, of Amarillo, were married July 23.

W. F. DALTON, petroleum engineer with Hunt Oil Co., has been transferred from Dallas, Tex., to the newly opened Hunt offices in Shreveport, La., where he will work on the Cotton Valley unitization and pressure maintenance project soon to start.

JOSEPH JENSEN, chief petroleum engineer of Tide Water Associated Oil Co. in California, recently had another of his excellent parties at his beach home that was attended by over 100 present and former employes of the company. This yearly get-together has been an event for the past 6 years.

L. A. CRANSTON, vice president of Honolulu Oil Co. and vice president of Oil Producers Agency of California, was elected president of the California Petroleum Safety Board at its recent annual meeting. W. C. WHALEY, of Barnsdall Oil Co.; L. L. AUBERT, of Bankline Oil Co., and A. S. HAYES, of Bell & Loffland, were elected vice presidents at the same time.

R. R. RICE, petroleum engineer for Texas Co., has been transferred from the company's Tulsa office to the Seminole district with headquarters at Seminole, Okla.

W. A. (GUS) DELANEY, independent producer of Ada, Okla., last week suffered a fractured kneecap when he fell from a concrete dam at his private fishing lake near Ada.

GEORGE P. RYAN, Oilfield Testing & Engineering Co. of Los Angeles, Calif., has opened new field offices and laboratory in a building erected by the firm in the Santa Fe Springs field.

MORRIS R. PITTMAN, drilling engineer for Standard Oil Co. of Venezuela, located at Caripito, Venezuela, has been spending the past few weeks in Houston, Tex., Los Angeles, Calif., and Tulsa in the interests of his company.

H. WALDRON SMITH, vice president of Luling Oil & Gas Co., San Antonio, Tex., is in Jackson, Miss., where he is supervising the opening of a branch office of the company to handle the new activities and interests developed by the firm in the Mississippi play.

TORKILD RIEBER, chairman of the board of the Texas Co., and a native of Norway, is among the leading American industrialists of foreign birth whose names have been selected to appear on the Wall of Honor at the American Common at the New York World's Fair.

ARTHUR HARVEY, Dallas, Tex., is the president of a new firm organized under the name of Tex-Harvey Oil Co., and officed in the Great National Life Building in Dallas. J. F. GIBBON is the secretary-treasurer; DORSEY HAGER will be chief geologist; JOHN H. COOPER is the drilling superintendent; B. C. McDONALD is head of the production department, and RAY KINNAN is superintendent of the land and lease department.

Development Executive

THE election of Frank A. Howard, last week, as vice president of the Standard Oil Co. (New Jersey) is a recognition both individual achievement and the increasing importance of research and development work in the practical phases of the industry's operations. Mr. Howard for many years has been widely known among technologists of the industry for his work in developing new processes and new products for his company.

FRANK A. HOWARD

In his new position he becomes an executive of the company which is the principal refining subsidiary of the Standard Oil Co. of New Jersey. He will have full responsibility in all chemical, research and patent matters, and coordinate all the activities of the parent company in these fields. He will continue as president of the Standard Oil Development Co., and will also retain his position as an officer or director in several affiliated companies, including Standard Alcohol Co., Standard I. G. Co., Jasco, Inc., Hydro Patents Co., and Ethly Gasoline Corp.

Mr. Howard graduated from the engineering school of George Washington University in 1911, and from the law school in 1914. He was admitted to the bar in 1914. He was employed by the patent department at Washington for a time and in 1919 joined the Standard of New Jersey organization. His knowledge of engineering, law and patent procedure was invaluable in the organization of a general technical and patent department for the company. This department in 1922 became the Standard Development Co.

Mr. Howard is credited with directing the work which has resulted in the company's strong patent position in the art of cracking and the application of hydrogenation as a manufacturing practice of the refining industry.

R. E. McPHAIL, geologist, Phillips Petroleum Co., Wichita Falls, Tex., has been transferred to Corpus Christi, Tex., effective August 1.

LATHAM G. YATES, instructor at the University of Pittsburgh, Pittsburgh, Pa., is spending the summer school vacation in the Bartlesville, Okla., production offices of Phillips Petroleum Co.

GEORGE CALVERT, independent operator of Fort Worth, Tex., is on an extended big-game and fishing expedition in northwestern Canada. He is not expected to return to Fort Worth for several weeks.

D. B. McCONNELL, state mineral director of Louisiana, suddenly became ill while en route from New Orleans to Shreveport, La., last week and was taken from the train at Bunkie where he was placed in the hospital.

FRED VAN BILDERBEEK, who was stationed at The Hague, Holland, with Royal Dutch-Shell, is now in the United States studying field methods and is making preparations to leave Los Angeles, Calif., soon for the Dutch East Indies.

DeWITT GREEN has returned to his home at Franklin, Pa., from Parma, Italy, where he was employed by the Standard Oil Co. He left Italy after that country entered the war and went to Switzerland, Spain and Portugal, sailing on the United States liner Manhattan. His brother, Harold, is still working in Hungary.

C. A. MILLER, of Houston, Tex., vice chairman of the petroleum section of the National Safety Council, and associated with the Texas Co., was appointed last week as one of eight industrial safety experts to supervise a program to safeguard the productive man power of the nation engaged in defense-program activities. He was named by Secretary of Labor Frances Perkins.

Shifts: H. P. KEMP, superintendent, Humble Oil & Refining Co., from Refugio, Tex., to Freer, Tex.; J. M. WALLS, Walls Development Co., from Mount Carmel, Ill., to Salem, Ill.; KENNETH B. ABSHER, Absher & Booth, from Mattoon, Ill., to Wichita, Kans.; A. L. BRADEN, secretary and treasurer, Major Oil Co., from Evansville, Ind., to Tulsa; CLYDE F. WALKER, engineer, Chester Oil Co., from Terre Haute, Ind., to Valparaiso, Ind.; A. G. EBERTS, engineer, Texas Co., from Greenwood, Miss., to McComb, Miss.; W. E. JOOR, JR., engineer, Petroleum Conversion Corp., from Roselie, N. J., to Bryn Mawr, Pa.; MAX LYON, engineer, Carter Oil Co., from La Junta, Colo., to Gettysburg, S. D.; F. G. PHILLIPS, engineer, Shell Oil Co., Inc., from Iowa, La., to Kilgore, Tex.; JAMES M. JOHNSTON, engineer, Shell Oil Co., Inc., from Tonkawa, Okla., to Wichita Falls, Tex.; J. F. DARBY, president, Darby-Lynde Co., from Muskogee, Okla., to La Jolla, Calif.; J. RAY STEBBINS, Stebbins Oil & Gas Co., from Tulsa, to Jackson, Miss.; CURTIS C. BALDING, engineer, Compagnia Tecnica Industrie Petroleum Co., from Leghorn, Italy, to Malta, Ohio.

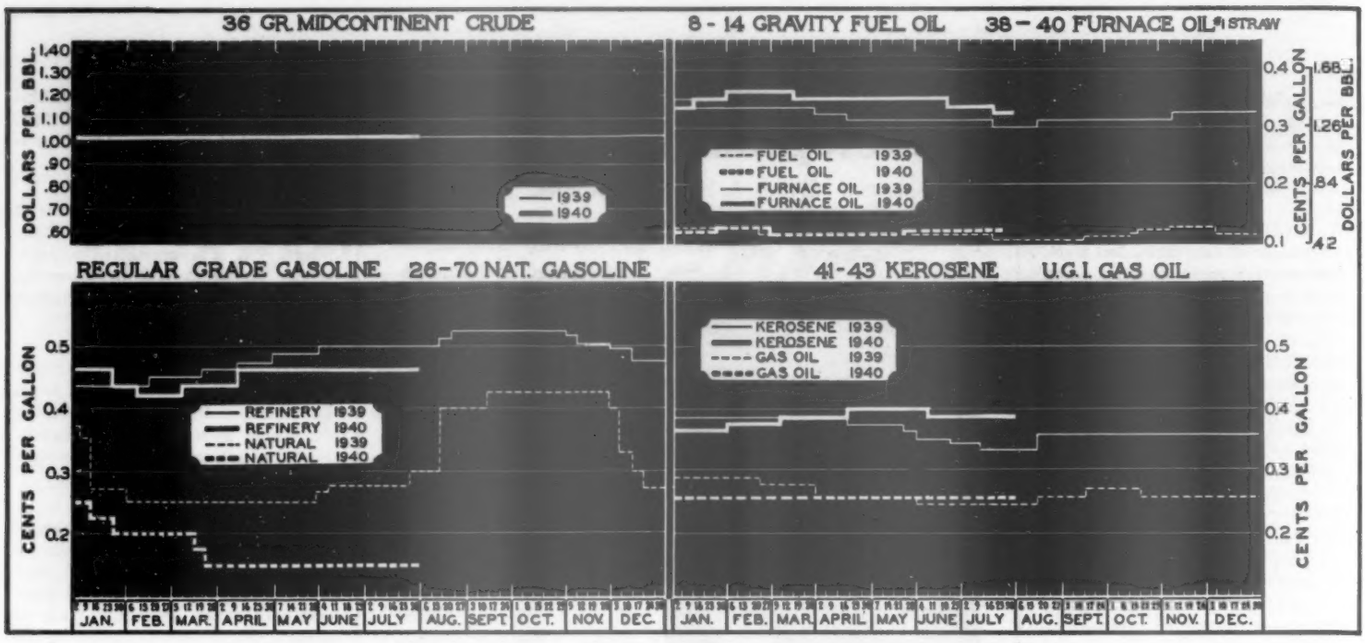
JOHN WATSON, land man for Sinclair Prairie Oil Co., has been transferred to Parkersburg, W. Va., to open a branch office for the company.

K. C. SPOONER, division geologist, Atlantic Refining Co., Houston, Tex., has been transferred to Jackson, Miss., as division geologist in that state. He has been succeeded in Houston by H. H. TREAGER, transferred from Shreveport, La.

O. G. SMITH, for the past 2 years scout and land man for Sinclair Prairie Oil Co., in Wichita Falls, Tex., left last week for Youngstown, Ohio, where he will assume the duties of land man. E. M. WOOLLEY, formerly with the land department in the company's Shawnee, Okla., office, has been transferred to Wichita Falls as head of the land and lease department.

F. R. CORBELL, formerly superintendent for Magnolia Petroleum Co. of the Lea County district at Lovington, N. M., has been transferred in that capacity to Alice, Tex. O. A. STOUT, formerly production superintendent for Magnolia at Wewoka, Okla., replaces him at Lovington.

D. W. HOVEY, vice president and general manager, Republic Oil & Refining Co., Houston, Tex., was elected president of the Gulf Coast Refiners Association at its annual meeting. G. L. ROWSEY, Taylor Refining Co. and Coastal Refineries, Inc., Taylor, Tex., and CORNELIUS KROLL, Southport Petroleum Co., Houston, Tex., were reelected vice presidents; L. F. ROTHERMEL, Maritime Oil Co., Houston, treasurer, and GEORGE REID, executive secretary. Directors elected are: JOHN A. BARTLETT, Amsco Refining Co.; ED SINGER, Pontiac Refining Co.; S. S. SELTZER, JR., Southwestern Oil & Refining Co., all of Corpus Christi, Tex., and F. E. HOLSTEN, Chalmette Petroleum Co., New Orleans, La.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Gasoline Shipping from Group 3 Area Advancing on Crest of Demand Wave

By H. STANLEY NORMAN

GASOLINE is moving in record-shattering volume from refineries in the Group 3 territory against contract-shipping instructions and against spot orders. Supplies are still more than sufficient to meet demand, however, and this condition continues to hold prices at unchanged levels.

Oklahoma producers of natural gasoline are enjoying a margin of 0.25 to 0.5 cent over the Group 3 quotations because of freight differential existing between intrastate points and Breckenridge, Tex., for example. Business volume is satisfactory in Oklahoma.

Oklahoma Position Stronger

Depressed condition of the natural-gasoline market in the freight-differential territory prevents any substantial improvement. The higher price obtainable by Oklahoma plant operators is strictly and narrowly regulated by the freight differential.

There has been no exceptional activity by major companies recently in the refinery gasoline market. Regular shipments from independent suppliers are moving north into the hands of large distributors but contracts appear to be sufficient at the moment to cover requirements from outside manufacturers.

The Chicago marketing territory is in the middle of the largest consumption period in history and there is virtually no resistance to the present range of Group 3 quotations ranging from scattered offers of 60-octane gasoline at 3½ to a maximum of 4⅞ cents for 72-74 "regular" motor fuel.

Jobbers in parts of the Middle West are still working on reserve stocks accumulated just before the federal tax was increased 0.5 cent on July 1 but indications are that a majority are back in the market purchasing for nearby requirements.

Light fuel oils are in the normal seasonal lull. Prices are being maintained at unchanged levels by refiners who prefer to store against next winter's requirements rather than to make concessions this late in the season. The reductions of an eighth of a cent per gallon on a few grades of tractor fuels for the week ended July 23 appear to have established bottom for the market.

There has been no improvement within the Group 3 territory in the demand for tractor fuels. Lack of tractor-fuel demand is partially due to the expanding use of gasoline in rural auxiliary equipment. The price differential is not substantial under present conditions and the slightly higher cost of gasoline is absorbed to get easier starting and performance advantages.

Most of the refiners in the Group 3 territory have established outlets for their residual fuel-oil production through railroad contractural relationships and consequently this product is no particular problem.

The Chicago market for residual fuel, however, is strong and gives indication of at least holding its present position until the season of greater consumption arrives in the fall. The additions of residual fuel oil to storage in the off-season are comparatively mild, indicating that consumption by heavy industry is running ahead of normal expectancy.

Furnace Oils Firm

Most of the furnace oil moving from the Oklahoma territory is bringing the high side of the quoted range. Kerosene is in moderate demand at the previously prevailing prices. Refiners throughout Group 3 territory are showing restraint in pushing light fuel oils. Despite the advance of national stocks to about 3,750,000 bbl. more than at the comparable period in 1939 there is ample indication of a consumptive balance this winter in the increased sales of burning equipment.

Lubricating oils are moving in a normal ratio to record-breaking domestic gasoline shipments. The Mid-Continent prices are reasonably firm after the reduction of 1 cent in bright stocks posted July 19 in sympathy with lower quotations in Pennsylvania.

There is an inkling, nothing that could be considered tangible in any sense, that the jam of natural gasoline on the Gulf Coast is beginning to disintegrate. The evidence is based on nothing more secure than the issuance of shipping instructions against high vapor-pressure natural purchased several months ago.

Refined Oil Market Barometer

Refinery gasoline is moving in record quantities into domestic consuming channels. Abundant stocks have prices pegged at previous levels. Refusal of the Maritime Commission to clear tankers for Spain and Japan places an additional obstacle in the path of exports presaging another decline in offshore movement.

MID-CONTINENT. There is a faint inkling that high vapor-pressure natural stocks may soon start moving.

EAST COAST. The tank-car gasoline market is spotty. Rumors of price shading are spreading.

GULF COAST. Prices for better grades of gasoline are showing more resistance.

PENNSYLVANIA. Domestic demand for lubricating oils is satisfactory but low exports are unchanged.

CALIFORNIA. Heavy fuel-oil prices are holding their recent gains.

CHICAGO. Motor fuel consumption is hitting new peaks. Tank-wagon prices are stable.

Effect of Restrictions on Export Causing Concern on East Coast

By J. P. O'DONNELL

NEW YORK, July 30.—Ultimate effect of the new licensing system for the export of crude petroleum and petroleum products was the cause of considerable concern in the eastern refined-products market. Apprehension was particularly evident among those companies whose export business in lubricating oils and wax is a major consideration and who have already suffered greatly because of restricted exports as a result of the war. Several export officials, questioned regarding their views on the administration's new stand, declined to comment until more complete details were available.

While most of those contacted were of the opinion that the restrictions on the free shipment of petroleum and its products were limited to licenses, they pointed out that the possibilities of such regulations were apparently all-encompassing, i.e., the Government is in position to regulate all exports. The extent to which the federal authorities will avail themselves of these powers was the cause of the concern.

Concurrent with the announcement of the new policy was the issuance of preliminary data on exports during the month of June. It is significant that the dollar volume of petroleum exports showed a slight gain in that month over May, a gain that would have been larger had it not been for a decline in lubricating-oil export quotations. These preliminary figures show the dollar volume of petroleum exports in June was $30,883,000 against $29,821,000 in May. Included were gasoline exports of a value of $6,244,000 in June against $6,008,000 in May and lubricating-oil exports of a value of $6,458,000 in June against $6,557,000 in May.

One likely important effect of the new regulations would be an increase in the tanker tonnage available for coastwise service of which there is already an oversupply. At a meeting Thursday of last week the Maritime Commission disapproved the charters to aliens of five tankers and one steamship scheduled for July, August or September loading for Japanese ports. Three of the tankers were scheduled for loading in California ports and the other two and the steamship were scheduled for Gulf Coast or other ports. These disapprovals were, it was officially stated, a part of a "'rapidly developing policy to avoid letting American tankers under control of aliens get too far away from this country." It was likewise stated that during the past 6 weeks the commission has refused practically all charters of American flag ships beyond the Western Hemisphere.

Motor gasoline continued to be quoted generally at a range of from 5¾ to 6¼ cents in the New York Harbor area but there were continued reports that these prices could be shaded. It was reported last week that tank-car quantities could be obtained at 5½ cents and this week even this price was reported to be high in some quarters. These reports were to the effect that gasoline in tank-car lots could be obtained at 5⅝ cents a gallon and in barges at 5 cents. Most suppliers, however, merely report that business is desultory with most buying confined to immediate needs. This was taken as an indication that buyers are anticipating lower prices in the future.

The statistical position of gasoline was improved somewhat in the preceding week with the report of a reduction in stocks amounting to 607,000 bbl. While this amount compared favorably with the July 4 week reduction, it still left total stocks for the East Coast area substantially above the level of a year ago. Stocks on July 20, this year, totaled 22,054,000 bbl. against 20,744,000 on July 22, last year, an increase of 1,310,000 bbl. or better than 6 per cent.

The dull East Coast gasoline market is a reflection of similar conditions on the Gulf where no price changes and no activity were reported in motor gasoline. However, "hundreds of thousands of drums" of aviation gasoline were reported sold to Japan, scheduled for loading in the near future. It was understood that shipments were to be made in American flag boats, however, and whether or not the transaction will be completed in view of the new stand taken by the American Maritime Commission could not be learned immediately here. It is known that charters sought by the reported purchaser of the gasoline for Japan have been denied.

Domestic heating oil was reported available at 4 cents per gallon here late this week though a price of 4.3 cents was being quoted by the major suppliers. Easiness in this market has been anticipated because of increasing supplies and the usual slow summer demand. Gas oil and distillate inventories took one of their largest jumps of the year in the previous week when they rose 685,000 bbl. to 12,460,000 bbl. This total compares with stocks of 10,835,000 bbl. for the East Coast area a year ago. Residual-fuel-oil stocks rose a modest 95,000 bbl. to 10,365,000 bbl. This minor increase was viewed as a possible indication of a long anticipated gain in industrial demand that has otherwise given little indication of developing.

Bunker C fuel oil continued to be quoted at a range from $1.25 to $1.35 per barrel. Extension to September of contracts specifying a price of $1.25 has led to spot sellers meeting this quotation. Local strength in Bunker C fuel markets was regarded as being to a large extent, a reflection of strength on the Gulf Coast. Lack of sustained demand has caused some concern regarding the maintenance of the price structure though a good market is anticipated in the fall.

Last week's reductions in Pennsylvania bright stock which brought prices under the level of Mid-Continent bright stock were reported to have stim-

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Gulf Coast Markets

HOUSTON, Tex., July 30.—The confusion in the Gulf Coast market which has followed the action last week of the U. S. Maritime Commission in holding up movement on the export purchases of aviation gasoline that were made on the Gulf Coast the preceding week had not been settled at the opening of this week. While some of the material bought has been allowed to clear, the major portion of the orders, involving particularly that material destined for the Japanese Government, still was tied up at Gulf Coast ports.

Conflicting reports were circulated Monday. One was that the Government would extend its restrictions on tanker-charter permits which were imposed last week on shipments of oil to Spain and Japan to include movement of oil to all foreign countries, including Canada and England. The other was that the Government would relent on its last week's order to permit the movement of material already purchased, and set August 1 as the date when the order would go into effect.

Under the action of the Maritime Commission last week, charters of three tankers already loading or preparing to load gasoline destined for Japan were disapproved and the tankers refused clearance. Two of these were vessels under charter to Cities Service, the major purchaser of the aviation gasoline recently bought on the Gulf Coast. The other was a Luckenbach ship loading gaso-

(Continued on Page 95)

A.P.I. Weekly Refinery Statistics

Week Ended July 27, 1940

	Capacity reporting (per cent)	Total gasoline stocks (bbl.)	Residual fuel-oil stocks (bbl.)	Gas oil and distillate stocks (bbl.)	Daily crude runs (bbl.)
East Coast	100.0	21,846,000	10,460,000	13,415,000	563,000
Appalachian	91.0	3,500,000	499,000	345,000	121,000
Ind., Ill., and Ky.	90.2	15,542,000	3,345,000	4,612,000	561,000
Okla., Kans., and Mo.	76.9	6,686,000	2,043,000	1,433,000	257,000
Inland Texas	59.6	1,718,000	1,367,000	351,000	111,000
Texas Gulf	85.3	13,258,000	6,081,000	5,855,000	859,000
Louisiana Gulf	97.6	2,673,000	1,427,000	1,102,000	111,000
N. Louisiana and Ark.	51.5	530,000	485,000	256,000	47,000
Rocky Mountains	55.5	1,100,000	537,000	112,000	45,000
California	87.3	16,295,000	77,470,000	9,835,000	498,000
Total reported	85.3	83,148,000	103,714,000	37,316,000	3,173,000
Est. unreported	.....	7,025,000	2,210,000	1,665,000	382,000
*Est. total	.....	90,173,000	105,924,000	38,981,000	3,555,000
*Est. total previous wk.	.....	91,789,000	105,864,000	37,504,000	3,540,000
*July 28, 1940	.....	78,238,000	115,067,000	34,782,000	3,460,000

*Bureau of Mines.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATE)

Week ended July 20, 1940	261,596,000 barrels
Week ended July 13, 1940	*261,494,000 barrels
Week ended July 22, 1939	268,447,000 barrels

*Figure revised from previous report of 260,994,000 bbl. Figures do not include stocks of heavy, unrefinable California crude.

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of July 30, 1940

Taxes

The gasoline quotations given in the following tables include the 1½-cent federal tax, as well as state, county, and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline—Tank wag.	Dlr. tax	Incl. tax	Kero. tank wag.
Chicago, Ill.	15.6	13.6	4.5	10.0
Decatur	14.1	12.6	4.5	9.5
Joliet	15.6	14.1	4.5	10.0
Peoria	15.6	13.2	4.5	10.0
Quincy	15.4	13.9	4.5	9.8
Davenport, Ia.	15.6	14.1	4.5	†10.0
Des Moines	15.4	13.9	4.5	‡9.8
Mason City	15.8	14.3	4.5	†10.2
Duluth, Minn.	17.4	15.9	5.5	10.8
Mankato	17.0	15.5	5.5	9.0
Minneapolis	17.0	14.0	5.5	10.4
LaCrosse, Wis.	17.0	15.5	5.5	10.4
Green Bay	17.4	15.9	5.5	10.3
Milwaukee	16.8	15.3	5.5	10.2
Detroit, Mich.	14.1	12.6	4.5	7.6
Grand Rapids	13.7	11.7	4.5	9.0
Saginaw	14.7	13.2	4.5	9.3
Evansville, Ind.	17.1	15.6	5.5	†10.5
Indianapolis	17.3	14.8	5.5	†10.2
South Bend	17.3	15.8	5.5	†10.2
Fargo, N. D.	18.2	16.7	5.5	11.6
Huron, S. D.	17.5	16.0	5.5	10.9
Kans. City, Mo.*	14.9	13.4	4.5	8.0
St. Louis*	15.2	13.2	4.5	8.0
St. Joseph	14.9	12.5	4.5	7.9
Wichita, Kans.	13.8	12.1	4.5	7.0

*State tax 2 cents, 1-cent city tax, and 1½-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gal. or more, 1.5 cents off; minimum delivery 25 gal.

Stanolex Fuel Oil in Chicago

Effective April 18, 1940, f.o.b. Chicago, tank-wagon prices: Standard heater oil, 1-99 gal., 8.75 cents; 100-149 gal., 7.75 cents, 150 gal. and over, 7.25 cents. Stanolex fuel oil No. 1, 1-99 gal., 8.5 cents; 100-149 gal., 7.5 cents; 150-399 gal., 7 cents; 400 gal. and over, 6.5 cents. Stanolex furnace oil, 1-99 gal., 8.5 cents; 100-149 gal., 7.5 cents; 150-399 gal., 7 cents; 400 gal. and over, 6.5 cents. Stanolex fuel oil A, 1-399 gal., 5.5 cents; 400-799 gal., 4.5 cents; 800 gal. and over, 4.25 cents. Stanolex fuel oil B, 1-399 gal., 5.5 cents; 400-799 gal., 4.5 cents; 800 gal. and over, 4.25 cents. Stanolex Bunker C fuel oil, 1-999 gal., 4.25 cents; 1,000 gal. and over, 3.25 cents.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline—Cons'r tank wag.	Dlr. vided tax	Incl. tax	Kero. tank wag.
Ohio points	16.0	15.0	5.5	*9.0

*Includes state tax of 1 cent.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline—Cons'r tank car	Dlr. tank wag.	Incl. tax	Kero. tank wag.
Atl'tic City, N. J.	12.1	13.2	4.5	7.7
Newark	12.1	13.2	4.5	7.7
Annapolis, Md.	13.85	14.85	5.5	9.5
Baltimore	13.25	14.25	5.5	8.5
Cumberland	14.65	16.65	5.5	10.0
Wash'gton, D. C.	11.50	12.50	3.5	9.5
Danville, Va.	15.45	17.95	6.5	11.0
Norfolk	14.25	16.75	6.5	10.5
Petersburg	14.55	17.05	6.5	11.2
Richmond	14.55	17.05	6.5	10.5
Roanoke	15.75	18.25	6.5	11.0
Charles'n, W. Va.	15.05	17.55	6.5	12.6
Parkersburg	14.35	15.85	6.5	11.2
Wheeling	15.35	17.25	6.5	11.8
Charlotte, N. C.	17.40	17.50	7.5	11.8
Hickory	17.95	19.45	7.5	12.3
Mt. Airy	17.80	19.30	7.5	12.2
Raleigh	17.15	16.5	7.5	11.5
Salisbury	17.45	16.50	7.5	11.9
Charleston, S. C.	15.25	17.75	7.5	9.75
Columbia	16.10	18.60	7.5	11.5
Spartanburg	16.80	19.30	7.5	12.7

Price basis to Essolene undivided dealers: Dealer tank-wagon price less 0.5 cent per gallon. Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gal., consumer tank-wagon price at time and place of delivery; 100,000 gal. per year, consumer tank-car price plus 0.5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less 0.5 cent per gallon.

Effective January 16, 1939, in North Carolina the commercial consumer schedule became as follows: Single deliveries of 50 gal. or more, consumer tank-wagon price. Single deliveries of less than 50 gal., 4 cents per gallon over consumer tank-wagon price. Generally the posted consumer tank-wagon price will be equivalent to the dealer price, less 0.5 cent per gallon. The above policy also applies in South Carolina, effective January 23, 1939.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline—Cons'r tank wag.	Net dlr.	Incl. tax	Kero. tank wag.
Atlanta, Ga.	16.0	16.0	7.5	10.0
Augusta	17.5	17.5	7.5	10.0
Macon	17.0	17.0	7.5	9.0
Savannah	16.5	16.5	7.5	9.0
Birmingham, Ala.	17.5	17.5	8.5	9.0
Mobile	17.5	17.5	9.5	8.0
Montgomery	18.5	18.5	9.5	10.0
Jackson, Miss.	16.5	16.5	7.5	9.0
Vicksburg	16.5	16.5	7.5	9.0
Jacksonville, Fla.	14.0	14.0	8.5	8.0
Miami	14.0	14.0	8.5	8.0
Pensacola	17.5	17.5	9.5	8.5
*Tampa	18.5	15.5	8.5	8.0
Lexington, Ky.	14.5	14.5	6.5	9.5
Covington	15.0	15.0	6.5	9.5
Louisville	15.0	15.0	6.5	9.0
Paducah	15.5	15.5	6.5	9.0

Price basis to tank-wagon consumers, effective January 4, 1937, 3 cents per gallon below tank-wagon price.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent. All are included in the table.

*Temporary discounts to tank-wagon consumers in Tampa 3 cents per gallon below consumer tank-wagon price on Crown gasoline.

Pennsylvania and Delaware

ATLANTIC REFINING CO.

	Gasoline—Cons'r tank car	Dlr. tank wag.	Incl. tax	Kero. tank wag.
Philadelphia, Pa.	12.5	14.0	5.5	10.5
Pittsburgh	13.5	15.0	5.5	10.5
Allentown	13.5	15.0	5.5	10.5
Erie	13.5	15.0	5.5	10.0
*Scranton	13.0	14.5	5.5	10.5
Altoona	13.5	15.5	5.5	10.5
Dover, Del.	...	14.5	5.5	10.5
Wilmington	...	14.0	5.5	10.0

Price basis to undivided dealers, dealer tank-wagon price less 0.5 cent per gallon.

Discount on kerosene, 2 cents per gallon off tank-wagon price on tank-wagon deliveries of 25 gal. or more at one time.

*Voluntary discount of 1 cent allowed to dealers only.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline—Tank truck	Serv. sta.	Incl. tax	Kero. tank wag.
San Francisco	16.5	17.5	4.5	11.5
Los Angeles	16.0	17.0	4.5	10.0
Fresno, Calif.	17.5	18.5	4.5	12.5
Phoenix, Ariz.	20.5	21.5	6.5	*17.5
Reno, Nev.	19.5	20.5	5.5	13.5
Portland, Ore.	19.0	20.0	6.5	13.5
Seattle, Wash.	19.0	20.0	6.5	13.5
Spokane	20.5	21.5	6.5	16.5
Tacoma	19.0	20.0	6.5	13.5

*Includes 5-cent state tax.

Discount to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents. To commercial consumers: On tank-wagon price; on single deliveries of 40 gal. and over, advance quantity discount extended at time of delivery, 3 cents. Service-station schedule applies on single deliveries less than 40 gal. On kerosene in tank-car, transport-truck, and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank wagon.

March 18, 1939, split dealer discount was canceled.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline—Cons'r tank car	Dlr. tank wag.	Incl. tax	Kero. tank wag.
Albany	11.7	13.5	5.5	7.9
*Met. N. Y.: Manhat., Bronx, Queens, Brklyn., Staten Island	12.2	12.7	5.5	8.2
Buffalo	12.8	13.6	5.5	8.0
Rochester	13.3	14.2	5.5	8.5
Syracuse	12.7	13.9	5.5	8.7
Portland, Me.	11.7	13.8	5.5	8.0
Manchester, N.H.	12.4	12.5	5.5	8.8
Burlington	12.4	14.5	5.5	8.5
Boston, Mass.	10.8	11.8	4.5	8.3
Worcester	11.3	12.1	4.5	8.4
Hartford	11.0	12.0	4.5	8.1
New Haven	10.9	11.9	4.5	8.1
Providence, R. I.	10.7	12.2	4.5	8.3

*Does not include 2 per cent city sales tax, which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Effective February 15, 1939, the company changed its commercial consumer policy in New York and in New England points for tank-wagon delivery to the following: Annual purchases 10,000 gal. and under, tank-car price plus 2 cents per gallon; annual purchases 10,000 gal. up to 50,000 gal., tank-car prices plus 1.5 cents per gallon; annual purchases 50,000 to 200,000 gal., tank-car price plus 1 cent per gallon; annual purchases 200,000 gal. and over, tank-car price plus ½ cent per gallon. Private consumers pay undivided dealer price, plus 2 cents per gallon. Private consumers receiving full compartment deliveries of at least 200 gal. receive a discount of ½ cent per gallon.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline—Tank wag.	Dlr.	Incl. tax	Kero. tank wag.
Denver, Colo.	15.5	...	5.5	10.5
Grand Junction	17.5	...	5.5	12.5
Pueblo	15.5	...	5.5	9.0
Casper, Wyo.	16.5	...	5.5	11.5
Cheyenne	14.5	...	5.5	11.0
Billings, Mont.	17.5	...	6.5	11.0
Butte	15.5	...	6.5	13.0
Great Falls	17.5	...	6.5	12.0
Helena	15.5	...	6.5	12.5
Salt Lake, Utah	16.0	...	5.5	14.0
Boise, Idaho	20.6	...	6.5	16.0
Twin Falls	21.6	21.6	6.5	16.5
Albu'que, N. M.	16.0	...	6.5	9.5
Roswell	14.0	14.0	7.0	8.0
Santa Fe	17.0	...	7.0	10.0

*Includes city tax of 0.5 cent. †Includes state tax of 1 mill.

Tank wagon represents price to consumers. Dealer represents price to dealers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline—Cons'r tank car	Dlr. tank wag.	Incl. tax	Kero. tank wag.
New Orleans, La.	14.25	16.75	8.5	†11.0
Baton Rouge	15.25	17.75	8.5	‡10.5
Alexandria	15.25	17.75	8.5	‡10.5
Lafayette	15.50	18.00	8.5	‡10.0
Lake Charles	15.25	17.75	8.5	‡10.0
Shreveport	14.00	16.50	8.5	‡9.0
Knoxville, Tenn.	18.50	20.00	8.5	12.5
Memphis	16.50	18.00	8.5	11.0
Chattanooga	18.00	15.75	8.5	12.0
Nashville	17.50	16.90	8.5	11.5
Bristol	18.75	18.00	8.5	12.0

Essolene at dealer price less 0.5 cent per gallon to undivided dealers.

†Includes 1-cent parish tax and 1-cent state tax. ‡Includes 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gal. or more in one territory take posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gal. at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less 0.5 cent per gallon. Kerosene prices include 1-cent state tax.

Effective February 24, 1939, the company reestablished in New Orleans the commercial consumer policy on motor fuel effective in the rest of the state.

Effective December 12, 1938, the company revised its commercial consumer policy on motor fuel in New Orleans, as follows: Single deliveries of less than 50 gal., consumer tank car plus 2 cents per gallon 50 to 199 gal., consumer tank car plus 1 cent per gallon; 200 gal. and over, consumer tank car plus 0.5 cent per gallon.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline—Tank wag.	Incl. tax.	Kero. tank wag.
Texarkana, Ark.	13.5	5.5	7.0
Fort Smith	15.0	5.5	8.0
Little Rock	17.25	8.0	8.0
Muskogee, Okla.	13.0	5.5	7.0
Oklahoma City	11.5	5.5	6.5
Tulsa	12.5	5.5	6.0

Tank wagon represents price to consumers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline—Tank wag.	Dlr. tax	Incl. tax	Kero. tank wag.
Omaha	17.0	15.9	6.5	9.0
McCook	17.5	14.4	6.5	9.5
Norfolk	17.5	15.4	6.5	9.9
North Platte	17.8	15.0	6.5	10.2
Scottsbluff	18.4	15.5	6.5	10.5

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective January 1, 1935.

Texas

	Gasoline—Tank wag.	Dlr.	Incl. tax	Kero. tank wag.
Dallas, Tex.	11.5	15.5	5.5	6.0
Fort Worth	11.5	15.5	5.5	7.0
Houston	12.0	16.0	5.5	8.0
San Antonio	12.5	17.0	5.5	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank wagon*
Oleum spirits	16.2
V.M.&P. naphtha	16.5
Cleaners' naphtha	15.5
Stanisol	15.5

*Prices include 3-cent Illinois tax but not 1-cent federal tax nor 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gal. lots if covered by contract.

Canada

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Gasoline—Tank wag.	Incl. tax.	Kero. tank wag.
Halifax, N. S.	24.5	10.0	18.0
St. John, N. B.	24.5	10.0	18.0
Montreal, Que.	24.0	8.0	16.5
Toronto, Ont.	24.0	8.0	16.5
Hamilton, Ont.	24.0	8.0	16.5
Winnipeg, Man.	27.0	7.0	21.5
Brandon, Man.	28.0	7.0	22.5
Regina, Sask.	25.0	7.0	20.0
Saskatoon, Sask.	28.0	7.0	23.0
Edmonton, Alta.	25.9	7.0	20.0
Calgary, Alta.	23.0	7.0	18.0
Vancouver, B. C.	21.0	7.0	23.0

Tank-Wagon Changes

Effective July 29, Standard Oil Co. of Indiana advanced all subnormal tank-wagon prices on the three grades of motor gasoline in North Dakota, both to dealers and consumers, 0.5 cent per gallon, or to normal if the subnormalcy is less than 0.5 cent per gallon.

Effective June 27, Standard Oil Co. (Kentucky) reduced tank-wagon price on kerosene 1 cent at Macon, Ga.; reduced dealer and consumer tank-wagon price on regular gasoline 2 cents per gallon at Jacksonville and Miami, and on June 28 reduced gasoline 2 cents at Tampa, Fla. Effective July 6, Standard of Kentucky reduced kerosene tank-wagon prices 0.5 cent at Lexington, Ky., and Jackson, Miss. Effective July 12, the company reduced consumer and dealer tank-wagon price on regular gasoline 1.5 cents at Lexington and 0.5 cent at Atlanta, Ga. Effective July 5, Standard of Kentucky reduced regular gasoline tank-wagon prices 0.5 cent at Birmingham, Ala., and on July 3 the same reduction was posted for Mobile. Tank-wagon price on gasoline was lowered 0.5 cent on July 10 at Pensacola, Fla.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of July 30, 1940

The quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils. Octane ratings in Middle West, Mid-Continent, and Southwest are based on A.S.T.M. method of testing.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
72-74 octane (regular)	.04⅝	.04¾
63-66 octane	.04⅛	.04¼
60 octane and below	.03½	.03¾
60-62 400 grades:		
72-74 octane (regular)	.04⅝	.04¾
63-66 octane	.04⅛	.04¼
60 octane and below	.03½	.03¾

NORTH TEXAS—

U. S. Motor grades:		
72-74 octane (regular)	.04⅝	.04¾
63-66 octane	.04⅛	.04¼
60 octane and below	.03⅝	.03⅞
60-62 400	.03¾	.03⅞

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
72-74 octane (regular)	.05⅛	.05⅜
63-66 octane	.04⅝	.04⅞
60 octane and below	.04¼	.04½

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
72-74 octane (regular)		.04¾
60 octane and below		.04

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
72-74 octane (regular)	.04¾	.04⅞
63-66 octane	.04⅜	.04½
60 octane and below	.04	.04⅛
60-62 400 grades:		
72-74 octane (regular)	.04¾	.04⅞
63-66 octane	.04⅜	.04½
60 octane and below	.04	.04⅛

PENNSYLVANIA (inland refineries)—

74-76 octane (regular)		.06
72-74 octane		.05¾

CALIFORNIA (domestic movement)—

58-60 400, 65 oct. and higher	.06¼	.07¼
54-58 U. S. Motor	.05	.06½

EAST COAST (domestic)—

U. S. Motor grades:		
New York (Bayonne)*	.05¾	.06½
Philadelphia	.06	.06½
Boston	.05¾	.06
Baltimore	.06¼	.06½
Charleston, S. C.	.06¼	.06½

*All grades of gasoline ⅛ to ¼ cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery ¼ cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
72-74 octane	.04⅛	.04¼
70-72 octane	.04	.04⅛
68-70 octane	.03⅞	.04
65-67 octane	.03¾	.04

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.01⅛
Grade 18-55	.01⅜	.01⅞

NORTH TEXAS—

Grade 26-70		.01⅛
Grade 18-55		.01⅞

CALIFORNIA—

75-85 375-390	.05⅛	.05¾

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70		.01⅝

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 l.b.p., 110-flash, 540-550 e.p.	.03½	.03⅝
41-43 gr., 300-320 l.b.p., 110-125 flash, 500-520 e.p.	.03⅝	.03¾
46-48 gr., 210-230 l.b.p., 480-max., e.p.	.03⅞	.04

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

42-44	.03⅞	.04
41-43	.03¾	.03⅞

NORTH TEXAS—

41-43	.03¾	.03⅞

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.03¾	.04

ARKANSAS (Ark. and N. La. del.)—

41-43		.04¼

PENNSYLVANIA (inland refineries)—

46	.05	.05⅛
45	.04¾	.04⅞

CHICAGO (Based on Group 3)—

42-44	.04	.04⅛
41-43	.03⅞	.04

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.04½	.05½

NEW YORK (Bayonne, N. J.)—

41-43		.051

GULF COAST (domestic)*—

41-43		.04

*Barge price ⅛ cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03½	.03⅝
No. 1 prime white, 38-42	.03¼	.03⅜
No. 1 straw, 38-40	.03¼	.03⅜
No. 2 straw, 32-36	.03¼	.03⅜
No. 3 zero to 10, 28-32	.03⅛	.03¼

NORTH TEXAS—

No. 1 prime white, 38-42		.03½
No. 1 straw, 38-40		.03⅝

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.02⅞	.03

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36	.03¼	.03½

CHICAGO (Based on Group 3)—

Range oil	.03⅝	.03¾
No. 1 prime white, 38-40	.03¼	.03⅜
No. 2 straw, 32-36	.03¼	.03⅜
No. 3, zero to 15, 28-32	.03½	.03¼

NEW YORK (Bayonne, N. J.)—

*No. 1		.051
*No. 2		.044
*No. 4		.044

Barge deliveries ⅛ to ¼ cent under above tank-car price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil, under 35	.02⅝	.02¾
No. 5, low pour point, 18-22	.72½	.77½
No. 6, 15 and above, 8-14	.50	.55

NORTH TEXAS—

U.G.I. gas oil, under 35	.02⅝	.02¾
No. 5, low pour point, 18-22	.72½	.77½
No. 6, 15 and above, 8-14	.50	.55

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial		.70

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅝	.02⅞
No. 5, low pour point, 18-22	.75	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low pour point, 10-16	.60	.70
No. 6, 15 and above, 10-16	.45	.55

PENNSYLVANIA (inland refineries)—

36-40	.03⅞	.04

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.10	1.25
24 plus diesel, per bbl.	1.10	1.25
24 plus diesel (bunkers)	1.20	1.35
12-16 (bunkers at tidewater)	.75	.90
10-16 (cargo lots)	.65	.90
12-17 (tank cars)	.60	.75
10-17 (high sulfur)	.50	.65
San Joaquin Valley:		
10-18 (tank cars)	.50	.70
24 plus diesel, per bbl.	1.10	1.25
San Francisco:		
24 plus diesel, per bbl.	1.35	1.40
24 plus diesel (bunkers)	1.40	1.50
10-16 (bunkers)	.80	.85

GULF COAST—

No. 2 fuel	.03⅜	.03½
43-47 diesel	.03	.03½
48-52 diesel	.03¼	.03½
53-57 diesel	.03½	.03¾
58-and-above diesel	.03¾	.04
Diesel bunkers		1.50
Bunker C (bulk cargoes)	.80	.85
Bunker C (bunkers)		.80

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil	.04½	.05
28-30 diesel (lighterage 6¼c per bbl.)		1.80
28-30 diesel (tank cars)	.04½	.05
Bunker C (to ocean-going ships in N. Y. Harbor)	1.25	1.35
Industrial fuel (tank cars)	.035	.038

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

200-210 D, 10-25		.18
150-160 D, 0-10		.14
150-160 D, 10-25		.13½
100-110 D, 0-10		.13½
100-110 D, 10-25		.13
Steam refined:		
600 dark green (untreated)		.07

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pour point	.14½	.15
15 pour point	.13½	.14
25 pour point	.12	.14
Steam refined:		
600	.08	.09
650	.10	.11
600 flash	.11	.12
630 flash	.13	.14

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

0-10 pour point:		
150-3		.08
180-3		.09
200-3		.09½
250-3		.10⅛
280-3		.11
280-4		.10½
300-3½		.11½
350-3½		.12
400-3½		.12½
500-3½		.13
600-3½		.13½
100-2½ paraffin oil, 10-25		.05¼
10-25 pour point:		
200-3		.09
250-3		.10
280-3		.10½
280-4		.10

GULF COAST—

Pale oils:		
100-3	.05½	.05¾
200-3	.07¼	.07½
300-3	.07¾	.08
500-3½	.08⅛	.09
750-3½	.09	.09½
1,200-3½	.09¾	.10
2,000-4	.10	.10¼
3,000-4	.12¼	.12½
Red oils:		
200-5-6	.07	.07¼
300-5-6	.07½	.07¾
500-5-6	.08¼	.08⅝
750	.08⅝	.09¼
1,200-5-6	.09⅝	.09⅞

CALIFORNIA (moving to dom. market)—

Pale oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red oils:		
200-4-5	.07¼	.08
300-5-6	.07¾	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° F., 3 color, 400-405 flash:		
Zero pour point		.22⅛
10 pour point		.21½
15 pour point		.20⅞
25 pour point	.19	.20
200 vis. at 70° F., 3 color:		
Zero pour point		.24½
10 pour point		.23⅞
15 pour point		.22½
25 pour point	.21	.22

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (A.m.p.) w.c. scale	.03½	.03¾

PENNSYLVANIA (inland refineries)—

122-124 (A.m.p.) w.c. scale	.02¼	.02¾
124-126 (A.m.p.) w.c. scale	.02¼	.02¾

NEW YORK—

Wax in bags fully refined:		
125-127 (A.m.p.) wax	.056	.060
128-130 (A.m.p.) wax	.057	.062
130-132 (A.m.p.) wax	.058	.065
133-135 (A.m.p.) wax	.062	.070
135-137 (A.m.p.) wax	.064	.072
Crude scale:		
124-126 (A.m.p.) w.s.	.02¼	.02⅜
124-126 (A.m.p.) y.s.	.02¼	.02⅜
Petrolatum in barrels, carload lots:		
Dark green	.02250	.02625
Amber	.02375	.02875
Extra amber	.02625	.03000
Lily white	.04375	.05000
Snow white	.05125	.06000
Cream	.03625	.04125

Export Prices

GASOLINE

GULF COAST—

U. S. Motor		.04
60-62 400	.04	.04½
61-63 390	.04	.04¼
64-66 375	.04	.04⅛

LOS ANGELES—

U. S. Motor grades:		
Above 69 octane	.06½	.06½
65-69 octane	.05¾	.06¼
60-65 octane	.05¼	.05¾

KEROSENE

GULF COAST—

41-43 water white	.04	.04½

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.b. in bbl.)—

Cylinder stocks:		
600 S.R. unfiltered		.16
630 S.R. unfiltered		.18
600 flash, S.R.		.19
650 flash, S.R.		.21
Bright stock:		
Light, 25 pour point		.20

NEUTRAL OIL

200-3 color		.27
150-3 color		.25

PARAFFIN WAX

NEW YORK (prices per pound)—

123-125 A.m.p.		.05⅞
125-127 A.m.p.		.06
128-130 A.m.p.		.06¼
133-135 A.m.p.		.07
135-137 A.m.p.		.07¼
Crude scale:		
124-126 w.s.	.02¼	.03
124-126 y.s.	.02¼	.03

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

East Texas (Oct. 11, 1938)* $1.10
Sinclair Prairie Oil Marketing Co. October 2, 1939, De Soto Pipe Line October 2, 1939. Cities Service Co. October 5, 1939. Shell Oil, Inc., October 5, 1939.
Van, Tex. (Oct. 11, 1938)* $0.93
Talco, Tex. (Oct. 2, 1939)* ..... .65
Rodessa, Tex. .....
See North Louisiana gravity schedule
Cass and Panola counties, Texas...
See note below
Altus and Tipton† ..... See note below
Cayuga, Tex. (Oct. 2, 1939) $0.78
Clay Creek, Tex. ..... .85
Long Lake, Tex. (Jan. 20, 1940) ... 1.08

*Humble Oil & Refining Co. †Gulf Refining Co. Pure Oil Co.'s Van price, 93 cents, effective Oct. 13, 1938.

Cass and Panola counties, Texas, effective October 12, 1938, by Magnolia Petroleum Co., same as North Louisiana prices in Column 5 gravity schedule.

Altus and Tipton, Oklahoma, starting at below 25° at 71 cents, 2-cent spread to 40° and above at $1.03. Cayuga posted by Pan American Pipe Line Co. Clay Creek by Sun Oil Co. Long Lake by Sinclair Oil Marketing Co.

West Texas

See gravity table.
Fisher County, Texas (Apr. 1, 1939)
See note below
Pecos County (Oct. 11, 1938)* $0.78
Pecos shallow (Oct. 11, 1938)† ..... .65

*Shell Oil Co., Inc., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Oil Co., Inc.

Fisher County, Texas, by Shell Oil Co., Inc., below 25°, 68 cents; 25°, 70 cents, with 2-cent spread to 40° and over at $1.

North Louisiana and Arkansas

Shreveport, La. (Sept. 7, 1939) $1.05
See note below
Smackover, Ark. (Oct. 5, 1938)* ..... .73
Buckner, Magnolia, and Village, Ark. (Oct. 5, 1938)* ..... See note below
Schuler, Jones sand (Sept. 13, 1939) .79
Schuler, Reynolds sand (Sept. 13, 1939) ..... .91
Tullos and Urania ..... .89
Cotton Valley, La. (distillate) (Dec. 23, 1938)* 1.20
Cotton Valley (Holloway sand) Dec. 16, 1939 ..... 1.00
Lisbon, La. (Apr. 29, 1939) .....
See note below
Atlanta, Ark. (Sept. 13, 1939) ..... .93
Magnolia, Ark. (Sept. 13, 1939) ..... .93
Dorcheat, Ark. (Feb. 10, 1940) ... 1.00
University, La. (Sept. 11, 1939) ...
See note below

*Smackover posted by Standard Oil Co. of Louisiana, Oct. 5, 1938; by Magnolia Petroleum Co., Oct. 12; by Gulf Refining Co., Oct. 13; McMillan Refining Co. and Cross Refining Co. met price. Tullos and Urania posted by Hunt Oil Co. and Arkansas Fuel Oil Co.

The above Schuler, Atlanta, and Magnolia, Arkansas, flat prices posted by Lion Oil Refining Co. Shreveport flat prices posted by Caddo Crude Oil Purchasing Co. and Atlas Oil Corp.

Buckner, Magnolia, and Village, Arkansas prices effective Sept. 13, 1939, by Standard Oil Co. of Louisiana, start at below 25° at 63 cents, with 2 cents added for each degree up to 40 and over at 95 cents.

Effective Sept. 7, 1939, Standard Oil Co. of Louisiana posted gravity prices in Shreveport field beginning at below 25°, 73 cents; 25-25.9°, 75 cents, with 2 cents added for each degree up to 40 and over at $1.05. Dorcheat posted by Standard of Louisiana.

In the Lisbon, Louisiana, field, effective Sept. 14, 1939, Gulf Refining Co. and Caddo Crude Oil Purchasing Co. posted 27-27.9°, 66 cents, with 2 cents added for each degree up to 35 and over at 82 cents.

In the Baton Rouge (University) field, Louisiana, effective Sept. 11, 1939, Standard Oil Co. of Louisiana posted below 20°, 79 cents, with 3 cents added for each degree upward to 26-26.9° at $1, and then 2 cents added for each degree up to 40 and over at $1.28. Posting discontinued Mar. 14, 1940.

Effective June 10 Pure Oil Co. posted a flat price of $1 per barrel for crude in the Creole, Cameron Parish, Louisiana, field. This is a 4-cent increase.

Southwest Texas

Salt Creek, Darst Creek, Hilbig, Carroll, Clark and Zoboroski (Oct. 11, 1938)* $0.96
Pettus (Oct. 11, 1938)* 1.29
Flour Bluff (Dec. 3, 1938)* 1.23
Jim Wells County (Oct. 2, 1939)* ... 1.23
Darst Creek (Oct. 12, 1938)† ..... .96
Darst Creek and Bruner (Oct. 13, 1938)‡ ..... .96
Luling (Oct. 12, 1938)† ..... .87
Lytton Springs (Oct. 12, 1938)† .... .99
Mirando (Oct. 12, 1938)† .....
Government Wells (Oct. 13, 1938)..
See note below

*Humble Oil & Refining Co. †Magnolia Petroleum Co. Pettus price adopted by Atlantic Crude Oil Purchasing Co. ‡Gulf Refining Co.

Government Wells posted by Sun Oil Co. starts at 20° at 77 cents, 3-cent spread to 24°-24.9° at 89 cents.

Gulf Coast

Seabreeze, Willow Slough, and LaBelle, Tex. (Sept. 14, 1938)*** $1.10
Conroe, Tex. (Oct. 11, 1938)* 1.27
Black Bayou and White Castle, La. (Oct. 11, 1938)‡ ..... See note below
Gibson, La. (Oct. 11, 1938)† $1.04
Garden Island, La. (Oct. 12, 1938)‡. 1.24
Lafitte, La. (Oct. 12, 1938)‡ 1.04
Cleveland, Tex. (Oct. 12, 1938)¶ 1.14
Hardin, Tex. (Sept. 14, 1939)* 1.10
Tepetate, La. (Oct. 11, 1938)§ 1.03
Ville Platte, La. (Oct. 11, 1938)§ 1.03
Abbeville, La. (Jan. 1, 1939)§ .....
See note below
Bosco, La. (Dec. 3, 1938)‖ $0.93
Creole, La. (Oct. 13, 1938)‖ ..... .96
Gueydan, Sweet Lake, and Louise, La. (Oct. 13, 1938)‖ ....See note below
Vinton, Edgerly, Starks, Hackberry, Timbalier Bay, Quarantine Bay, and Grand Bay, La. (Oct. 2, 1939)**
Segno and Wing (Oct. 2, 1939)** See note below
Livingston (Oct. 11, 1938)† $1.10
Happytown, La. (Jan. 12, 1940)† .. 1.00

*Humble Oil & Refining Co. †Shell Oil Co., Inc., ‡Texas Co. §Continental Oil Co. ‖Pure Oil Co. ¶Magnolia Petroleum Co. **Gulf Refining Co. ***Sun Oil Co. Hardin prices by Humble and Sun companies.

Black Bayou, etc., starts at below 20° at 79 cents; 20°-20.9°, 81 cents; 21°-21.9°, 83 cents; then a 3-cent spread to 26°-26.9°, 98 cents; then a 2-cent spread at 40° and over at $1.14. Abbeville starts at below 36°, 92 cents; 2-cent spread to 40° and over at $1.02. Gueydan, etc., starts below 20°, 79 cents, 3-cent spread to 26°-26.9° at $1, and 2-cent spread to 40° and over at $1.28. Segno and Wing take Gulf Refining Co.'s Gulf Coast prices. Vinton, Edgerly, etc., schedule starts at below 20°, 86 cents, 2-cent spread to 34° and above at $1.16. Shell Oil Co., Inc., withdrew as a purchaser in the Schwab-Wilcox area, Texas, on Apr. 8, 1940.

Hackberry, East and West, effective October 2, 1939, by Stanolind Oil & Gas Co. Below 20 gravity 86 cents, 2 cents added for each degree up to 34° and over at $1.16.

Crude Prices by Gravities

Gravity—	Oklahoma and Kansas	Oklahoma and Kansas	Oklahoma and Kansas	North and Central Texas	Louisiana and Arkansas	East Central Texas	Gray County, Texas	Carson and Hutchinson Counties, Texas	West Texas, and Lea County, N. M.	Raccoon, Satsuma, and Tomball, Texas	Gulf Coast	Anahuac, Dickinson, Texas	Refugio, Texas	Mirando-Duval, Beaumont-West Beaumont, Texas	Golden Meadow, Louisiana	Lockport, Iowa, Cameron Meadows, Louisiana	Bunkie and Eola, Louisiana	Artesia, Jackson, Maljamar, N. M.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Below 18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.74	...	...
18-18.9	...	...	...	...	...	...	...	...	.53	....	...	...	...	...	....	.76	...	...
19-19.9	...	...	...	...	...	...	...	...	.53	....	.86	.81	.91	.86	....	.78	...	...
20-20.9	.70	....	.60	...	...	...	...	...	.55	....	.88	.83	.93	.88	....	.80	...	...
21-21.9	.72	....	.63	...	...	...	...	...	.57	....	.90	.85	.95	.90	....	.82	...	...
22-22.9	.74	....	.66	...	...	...	...	...	.59	.95	.92	.87	.97	.92	....	.85	...	...
23-23.9	.76	....	.69	...	...	.78	...	...	.61	.97	.94	.89	.99	.94	....	.88	...	...
24-24.9	.78	....	.72	.71	.73	.80	...	...	.63	.99	.96	.91	1.01	.96	.90	.91	...	...
Below 25	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.83	...
25-25.9	.80	.58	.75	.73	.75	.82	...	...	.65	1.01	.98	.93	1.03	.98	.90	.94	.85	...
26-26.9	.82	.63	.78	.75	.77	.84	...	...	.67	1.03	1.00	.95	1.05	1.00	.90	.97	.87	...
27-27.9	.84	.68	.81	.77	.79	.86	...	...	.69	1.05	1.02	.97	1.07	1.02	.90	.99	.89	...
28-28.9	.86	.73	.84	.79	.81	.88	.72	.67	.71	1.07	1.04	.99	1.09	1.04	.90	1.01	.91	.61
29-29.9	.88	.78	.87	.81	.83	.90	.74	.69	.73	1.09	1.06	1.01	1.11	1.06	.90	1.03	.93	.63
30-30.9	.90	.82	.90	.83	.85	.92	.76	.71	.75	1.11	1.08	1.03	1.13	1.08	.90	1.05	.95	.65
31-31.9	.92	.86	.92	.85	.87	.94	.78	.73	.77	1.13	1.10	1.05	1.15	1.10	.92	1.07	.97	.67
32-32.9	.94	.90	.94	.87	.89	.96	.80	.75	.79	1.15	1.12	1.07	1.17	1.12	.94	1.09	.99	.69
33-33.9	.96	.96	.96	.89	.91	.98	.82	.77	.81	1.17	1.14	1.09	1.19	1.14	.96	1.11	1.01	.71
34-34.9	.98	.98	.98	.91	.93	1.00	.84	.79	.83	1.19	1.16	1.11	1.21	1.16	.98	1.13	1.03	.73
35-35.9	1.00	1.00	1.00	.93	.95	1.02	.86	.81	.85	1.21	1.18	1.13	1.23	1.18	1.00	....	1.05	.75
36-36.9	1.02	1.02	1.02	.95	.97	1.04	.88	.83	.87	1.23	1.20	1.15	1.25	1.20	1.02	....	1.07	.77
37-37.9	1.04	1.04	1.04	.97	.99	1.06	.90	.85	.89	1.25	1.22	1.17	1.27	1.22	1.04	....	1.09	.79
38-38.9	1.06	1.06	1.06	.99	1.01	1.08	.92	.87	.91	1.27	1.24	1.19	1.29	1.24	1.06	....	1.11	.81
39-39.9	1.08	1.08	1.08	1.01	1.03	1.10	.94	.89	.93	1.29	1.26	1.21	1.31	1.26	1.08	....	1.13	.83
40 and over	1.10	1.10	1.10	1.03	1.05	1.12	.96	.91	.95	1.31	1.28	1.23	1.33	1.28	1.10	....	1.15	.85

Column 1—Effective October 17, 1938, by Standard Oil Co. of Indiana. By Gulf Refining Co., October 13, 1938. Carter Oil Co. schedule and prices same from 30° upward, but on lower gravities pays below 21° 60 cents, with 3 cents added for each degree up to and including 29-29.9°, effective October 13, 1939. Gulf Oil Corp. starts at below 25° 78 cents, October 13, 1938. Texas Co. schedule starts at 28-28.9° at 86 cents. Pure Oil Co. same as Standard of Indiana's schedule, effective October 14, 1938.

Column 2—Sinclair Prairie Oil Marketing Co. February 16, 1939.

Column 3—Magnolia Petroleum Co. effective October 12, 1938; Shell Petroleum Corp., October 22, 1938; Shell Oil Co., Inc., April 1, 1939.

Column 4—Effective December 3, 1938, by Humble Oil & Refining Co. in Central Texas. By Magnolia Petroleum Co. in East Central and in North and Central Texas, excepting that it starts at below 29° at 79 cents, effective December 3, 1938. Texas Co. in North and Central Texas, same as Magnolia's but effective October 12, 1938. Gulf Refining Co. same as Magnolia's, effective October 13, 1938. Sinclair Prairie Oil Marketing Co. abandoned the North Texas gravity table and posted a flat price of 75 cents per barrel effective July 16. Stanolind Oil Purchasing Co., in Cooke and Montague counties, schedule starts at below 21°, 60 cents, with a 2-cent spread upward to 40° and over at $1, effective October 17, 1938.

Column 5—Standard Oil Co. of Louisiana, effective October 5, 1938. Met by Gulf Refining Co. October 13; met by Texas Co. October 12.

Column 6—Humble Oil & Refining Co., October 11, 1938. Sinclair Prairie Oil Marketing Co. post flat price of 75 cents per barrel for Mexia crude effective July 16.

Column 7—Humble Oil & Refining Co., effective December 3, 1938. Sinclair Prairie Oil Marketing Co., October 11, 1938. Texas Co. quotes "Panhandle sweet crude," beginning with 34-34.9°, at 84 cents, with 2-cent spread to 40° and over at 96 cents, and "Panhandle sour crude," 79 cents for 34-34.9°, with a top of 91 cents for 40° and over, effective October 12. Magnolia Petroleum Co. met Humble prices throughout, effective December 3. Gulf Refining Co. quotes "Panhandle sweet crude" at below 29°, 72 cents with a 2-cent spread, and a top price of 96 cents for 40° and above, and "Panhandle sour crude" below 29°, 67 cents, with a top of 91 cents for 40° and above effective October 13. Phillips Petroleum Co. schedule for sweet crude in Gray, Carson, and Hutchinson counties, starts at below 29°, 72 cents, with a spread of 2 cents up to 96 cents for 40° and over, effective February 7, 1939.

Column 8—Humble Oil & Refining Co., effective December 3, 1938. Sinclair Prairie Oil Marketing Co., October 11, 1938. Texas Co. quotes "Panhandle sweet crude" at 34-34.9°, 84 cents, with a top of 96 cents for 40 gravity, and "Panhandle sour crude" at 34-34.9°, 79 cents, with a top of 91 cents for 40° and over, effective October 12. Gulf Refining Co. quotes "Panhandle sweet crude" at below 29°, 72 cents, with a top of 96 cents for 40° and over and "Panhandle sour crude" at below 29°, 67 cents, with a top of 91 cents for 40° and above, effective October 13. Phillips Petroleum Co. schedule for sour crude in Carson, Moore, and Hutchinson counties, starts at below 29° at 67 cents, with a spread of 2 cents up to 91 cents for 40° and over, effective February 7, 1939.

Column 9—Humble Oil & Refining Co., effective October 11, 1938. Texas Co. schedule starts at below 26°, 65 cents, and ends at 36° and over at 87 cents, effective October 12. Gulf Refining Co. starts at below 26° at 65 cents and ends at 40° and over at 95 cents, effective October 13. Magnolia Petroleum Co. schedule starts below 25°, 83 cents, and ends at 40° and above at 95 cents, effective October 12. Sinclair Prairie Oil Marketing Co. schedule same as that of Magnolia, effective October 11, but revised on March 24, 1939, to stop at 36° and over at 87 cents. Stanolind Oil Purchasing Co. schedule same as that of Humble, effective October 11. Stanolind Oil & Gas Co. (Winkler County) starts at below 26°, 65 cents, with a 2-cent spread, and a top of 95 cents for 40° and above, effective October 11, 1938. Effective September 1, 1939, Shell Oil Co., Inc., posted Yoakum County crude, starting at below 20°, 53 cents, with 2 cents added for each degree up to 36° and over at 87 cents. Effective March 31 Atlantic Refining Co. added Gaines County to its price schedule.

Column 10—Humble Oil & Refining Co., effective October 11, 1938. Magnolia Petroleum Co., in Tomball, effective October 12.

Column 11—Effective October 2, 1939, by Humble Oil & Refining Co. in Texas Coast. By Sinclair Prairie Oil Marketing Co. in Texas Coast, October 3, 1939. By Texas Co. at $1.16 in Texas and Louisiana Coast, October 2, 1939, schedule stopping at 34° and over. By Sun Oil Co. in Texas and Louisiana Coast, October 2, 1939. By Gulf Refining Co. in Louisiana October 2, 1939, excepting that schedule stops at $1.16 for 34° and above. By Gulf Refining Co. in Texas, effective November 1, 1939.

Column 12—Effective by Humble Oil & Refining Co. October 2, 1939. By Sun Oil Co. in Anahuac, October 2, 1939. By Gulf Refining Co. in Anahuac, October 2, 1939. On November 1, 1939, Gulf Refining Co. applied these prices to Anahuac, Hull (New), Pierce Junction, Orange, Thompson (deep).

Column 13—Effective October 2, 1939, by Humble Oil & Refining Co. and Continental Oil Co. By Texas Co. up to 28° and over at $1.09 October 2, 1939. Atlantic adopted Humble price schedule November 7, 1939, in Refugio and applied it also to Greta.

Column 14—Effective October 2 by Humble Oil & Refining Co. By Sun Oil Co. in Mirando alone, stopping at 24-24.9° at 96 cents. By Stanolind Oil & Gas Co. in West Beaumont, alone, October 2, 1939. Gulf Refining Co. in West Beaumont, October 2, 1939. By Magnolia Petroleum Co. in Beaumont, October 2, 1939. By Texas Co. in Duval and Mirando, stopping at 28-28.9° at $1.09. Continental Oil Co. in Mirando and Duval, October 2, 1939.

Column 15—Effective October 2, 1939, by Texas Co.

Column 16—Magnolia Petroleum Co., effective October 12, 1938.

Column 17—Standard Oil Co. of Louisiana, effective October 23, 1939.

Column 18—Continental Oil Co., effective October 11, 1938.

In the Bunkie and Eola pools in Louisiana, effective October 23, 1939, by Standard Oil Co. of Louisiana, below 25° 83 cents, 2 cents added for each degree up to 40° and over at $1.15.

Iowa, La., effective October 11, 1938, by Shell Petroleum Corp. and on April 1, 1939, by Shell Oil Co., Inc.: Below 18°, 75 cents; 18°-18.9°, 77 cents; 2-cent spread to 21°-21.9° at 83 cents; then a 3-cent spread to 26°-26.9° at 98 cents; then a 2-cent spread to 34° and above at $1.14.

Middle Western States

OHIO OIL CO.
(Effective June 8, 1939)

Illinois old fields	$0.95
Illinois basin	1.05
Princeton, Ind.	.95
Western Kentucky (June 9, 1939)†	.90
Birk City, Ky. (June 9, 1939)¶	.90
Corydon, Ky. (June 9, 1939)	.90
Greendale, Porter, Crystal and Wise, Mich. (Oct. 9, 1939)*‡	1.02
Buckeye, Bentley, Edenville, Beaverton. Mich. (Oct. 9, 1939)*	1.00
Freeman-Redding, Mich. (Oct. 9, 1939)‡	.97
Arenac, Mich. (Oct. 9, 1939)*	.82
West Branch, Mich. (Nov. 1, 1939)*	.85
Allegan-Kent and Ottawa, Mich, (Apr. 27, 1940)	1.08
Bloomingdale and Columbia, Mich. (Apr. 27, 1940)¶	1.08
Muskegon	1.00
Sherman and Freeman, Mich. (Oct. 9, 1939)‡	.97
Eastern Kentucky:	
Big Sandy River (June 9, 1939)†	1.02
Kentucky River (June 9, 1939)†	1.10

*Simrall Corp. †Ashland Refining Co. ‡Pure Transportation Co. §Imperial Refining Co. ¶Sohio Oil Co. Bloomingdale posted by Tri-Lakes Corp. Kent County by Naph-Sol Refining Co. Effective Feb. 1, 1940, Sohio Corp. posted $1.05 per barrel in the Centralia, Salem, and Louden fields for crude up to 30 bbl. per well per day. In the McClosky lime fields of Clay, Wayne, and Noble counties it posted $1.05 per barrel up to 40 bbl. per well per day. For all oil produced in excess of the above figure in any of the fields named it posted $1 per barrel. On May 25, 1940, Sohio posted $1 per barrel in the Griffin field in Gibson County, Indiana, and Wabash County, Illinois, and the North Griffin, South Griffin, Phillipstown, New Harmony and Irons in Wabash and White counties, Illinois. In the Salem field in Illinois, effective March 13, Canyon Pipe Line posted $1.05 per barrel for the first 40 bbl. per well and 90 cents per barrel for oil in excess of 40 bbl. per well. Allegan, Kent, and Ottawa posted by Commonwealth Pipe Line Co.

Rocky Mountain States

Dry Creek, Wyo. (Oct. 11, 1938)*	$0.92
Elk Basin, Wyo. (Oct. 11, 1938)*†	.90
Grass Creek, light, Wyo. (Oct. 11, 1938)*†	.90
Grass Creek, heavy (Oct. 11, 1938)†	.40
Lance Creek, Wyo. (Oct. 11, 1938)*	.77
Rock Creek, Wyo. (Oct. 11, 1938)*	1.00
Iles, light, Colo. (Oct. 11, 1938)†	.98
Iles, heavy, Colo. (Oct. 11, 1938)††	.92
Dutton Creek, Wyo. (Oct. 11, 1938)†	See note below
Frannie, light, Wyo. (Oct. 11, 1938)†	$0.55
Frannie, heavy, Wyo. (Oct. 11, 1938)†	.42
Hamilton dome, Wyo. (Oct. 11, 1938)†	.35
Midway, Wyo. (Oct. 11, 1938)†	See note below
Salt Creek Tensleep Crude, Wyo. (Oct. 11, 1938)†	$0.646
Salt Creek (Oct. 11, 1938)	See note below
Canon City, Colo. (Oct. 11, 1938)‡	$0.90
Florence, Colo. (Oct. 11, 1938)‡	.90
Cut Bank, Mont. (Jan. 1, 1940)	1.00
Kevin-Sunburst, Mont. (Jan. 1, 1940)	.80
Cat Creek, Mont. (Oct. 11, 1938)‡	1.10
Big Muddy, Wyo. (Oct. 11, 1938)‡	.98
Lance Creek, Wyo. (Oct. 11, 1938)‡	.77
Lea County, New Mexico	See West Texas gravity schedule‡
Artesia, Jackson and Maljamar	See gravity table‡
Fort Collins and Wellington, Colo.	See note below
Eddy County, New Mexico (Oct. 11, 1938)§	$0.77

*Ohio Oil Co. †Stanolind Oil & Gas Co. ‡Continental Oil Co. §Sinclair Prairie Oil Marketing Co.

Dutton Creek and Salt Creek Tensleep crudes start at below 29°, 86 cents, 2-cent spread up to 40° and over at $1.10. Salt Creek crude, excepting Tensleep, takes Standard Oil Co. of Indiana's Oklahoma-Kansas prices. Stanolind Oil & Gas Co., effective Oct. 11, discontinued posting prices in Greybull-Torchlight, Wyoming, and Hogback and Hospah, New Mexico. In Fort Collins and Wellington, Colorado, effective Oct. 11, 1938, by Continental Oil Co. 28-28.9°, 81 cents, with 2 cents added for each degree up to 40° and over at $1.05. Cut Bank and Kevin-Sunburst posted by Producers Refining Co.

Eastern States

SOUTH PENN OIL CO.
(Effective July 12, 1940)

Pennsylvania Grade oil in National Transit lines (Bradford field)	$2.00
Pennsylvania Grade oil in Southwest Pennsylvania lines	1.65
Pennsylvania Grade oil in Eureka Pipe Line lines	1.59
Corning grade oil in Buckeye Pipe Line Co. line (Nov. 4, 1939)	1.12

TIDE WATER ASSOCIATED OIL CO. and NEW YORK TRANSIT CO.
(Effective July 12, 1940)

Bradford, Pa.	$2.00
Allegany, N. Y.	2.00

PENNZOIL CO.
(Effective July 12, 1940)

Group A	$1.93
Group B	1.92
Group C	1.91
Group D	1.90
Group E	1.88

PURE OIL CO.
(Effective July 12, 1940)

West Virginia	$1.59

QUAKER STATE OIL REFINING CORP.
(Effective July 12, 1940)

Southern Ohio (Pa. Grade):	
In Buckeye Pipe Line lines	$1.55
In Eureka Pipe Line lines	1.59

Canada

ONTARIO
(Nov. 6, 1939, by Imperial Oil, Ltd.)

Petrolia	$2.10
Oil Springs	2.07
Bothwell	2.10

TURNER VALLEY
(July 18, 1940, by Imperial Oil, Ltd.)

Clear naphtha and discolored naphtha, 65° and higher	$2.14
Discolored naphtha and crude oil, 40°-40.9°	1.19
Crude-oil price schedule starts at $1.05, for 33°-33.9°, increasing 2 cents for each degree gravity with top price for 64°-64.9°	1.67

These prices f.o.b. producers' field tankage.

Crude-Oil Prices

Imperial Oil, Ltd., effective 8 a.m., July 18, 1940, increased the posted price of crude oil in Turner Valley, Canada, 5 cents per barrel. There was no change in price of crude naphtha or absorption oil.

Natural Gas Abandoned In Pennsylvania District

WILLIAMSPORT, Pa.—The Williamsport area, in which a rate fight over a natural-gas system has raged for 8 years, will see abandonment of the system by October, according to Richard J. Beamish, public utility commissioner. The Pennsylvania Power & Light Co. intends to discontinue use of natural gas and substitute the artificial product. The district embraces the city of Williamsport, South Williamsport, Muncy and other communities. A formal order by the Public Utility Commission last month terminated the case without reparations, but with an agreement that the company pay the city of Williamsport $100,000 for counsel fees.

New York Markets

(Continued from Page 87)

ulated some interest in the Pennsylvania market but no confirmation of any large buying could be obtained. Outside of a few additional inquiries, little change in the outlook could be discerned. One important manufacturer of Pennsylvania lubricating oils was apprehensive of the effect of the new export restrictions on bright stock and expressed the fear that the possible stimulation of lower prices may be offset entirely by the prospect of lower exports.

The Pennsylvania neutral market was reported well maintained and several leading suppliers expressed optimism over the prospects. Some of the optimism was occasioned by the fact that runs to stills by Pennsylvania refiners in the first part of July were down to an average of 70,000 bbl. per day against an average of approximately 75,000 bbl. per day in June. Any reduction in the quantities available will naturally be reflected in an improvement in the market position.

While prices were unchanged on fully refined grades, wax prices continued weak with prospects of further decline. The quoted low of 2.25 cents on 124-126 A.m.p. white and yellow scale was reported easy in view of rumors of sales at 2.125 cents per pound. Weakness in the crude-scale market would be readily reflected in the refined market which likewise failed to exhibit any strength, due to the almost complete lack of export demand.

STANDARD OIL CO. OF CALIFORNIA

Crude-oil prices at the well effective February 1, 1940

(All gravities above those quoted take highest price offered in that field)

Gravity—	Signal Hill (Long Beach) (El Segundo)	Wilmington	Seal Beach	Huntington Beach	Inglewood	Playa Del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Torrance	Richfield	Whittier East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	Greeley-Canal	Cole's Levee Richfield Western	Mountain View	Elk Hills	Buena Vista, Midway-Sunset, Lakeview	Lost Hills	Coalinga	Kettleman Hills
14-14.9	$.65	$.60	$.64	$.63	$.64	$.65	$.61	...	$.65	$.61	$.61	$.62	$.63	...	...	...	...	$.60	$.60	$.60	$.60	...
15-15.9	.65	.60	.64	.63	.64	.65	.61	...	.65	.61	.61	.62	.63	...	...	...	...	.60	.60	.60	.60	...
16-16.9	.65	.60	.64	.63	.64	.65	.61	...	.65	.61	.61	.62	.63	...	...	...	...	.60	.60	.60	.60	...
17-17.9	.65	.62	.64	.63	.68	.65	.61	...	.65	.61	.61	.62	.63	...	...	...	...	.60	.60	.60	.60	...
18-18.9	.65	.64	.64	.63	.71	.65	.65	...	.68	.61	.61	.62	.63	...	...	...	...	.60	.60	.60	.60	...
19-19.9	.69	.69	.64	.67	.75	.70	.69	...	.72	.61	.65	.62	.63	...	...	...	$.60	.64	.64	.64	.51	...
20-20.9	.73	.73	.64	.72	.79	.76	.74	...	.75	.65	.69	.62	.67	...	...	...	.60	.69	.69	.69	.62	...
21-21.9	.78	.78	.64	.76	.82	.81	.78	...	.79	.69	.73	.62	.72	$.63	...	...	.64	.74	.74	.74	.66	...
22-22.9	.82	.82	.69	.81	.86	.86	.82	...	.82	.73	.77	.66	.76	.63	...	...	.68	.79	.79	.78	.70	...
23-23.9	.86	.86	.75	.85	.89	.92	.86	$.71	.86	.78	.82	.71	.81	.67	...	...	.71	.84	.84	.82	.74	...
24-24.9	.90	.90	.80	.90	.93	.97	.90	.77	.89	.82	.86	.75	.85	.72	...	...	.75	.89	.89	.86	.78	...
25-25.9	.95	.95	.86	.94	.96	1.02	.95	.82	.93	.86	.90	.80	.89	.77	...	...	.79	.94	.94	.90	.82	...
26-26.9	.99	.99	.91	.99	1.00	1.08	.99	.88	.96	.90	.94	.84	.94	.82	...	...	.83	.99	.99	.95	...	...
27-27.9	1.03	1.03	.97	1.03	1.04	...	1.03	.94	1.00	.94	.98	.89	.98	.87	$.83	$.92	.87	1.04	1.04	.99	...	...
28-28.9	1.07	1.07	1.02	1.07	1.07	f.o.b.	1.07	.99	1.03	.98	...	.93	1.02	.91	.88	.96	.91	1.09	1.09	1.03	...	...
29-29.9	1.10	1.10	1.07	1.11	1.10	our	1.10	1.04	1.06	1.02	...	.98	1.06	.96	.90	.99	.95	1.14	1.14	1.07	...	...
30-30.9	1.14	1.14	1.12	1.15	1.14	pipe	1.14	1.09	1.09	...	...	1.02	1.10	1.01	.94	1.02	.99	1.19	1.19	1.11	...	...
31-31.9	...	...	...	...	1.17	line	1.17	1.14	...	...	...	1.07	1.14	1.05	.98	1.06	1.02	1.24	1.24	...	...	...
32-32.9	...	...	...	...	1.20	...	1.20	1.19	...	...	...	1.11	1.18	1.09	1.02	1.09	1.06	1.29	1.29	...	...	...
33-33.9	...	...	...	...	...	...	...	1.24	...	...	...	1.15	1.22	1.14	1.06	1.13	1.10	1.34	1.34	...	...	$1.12
34-34.9	...	...	...	...	...	...	...	1.29	...	...	...	1.20	1.26	1.19	1.10	1.16	1.14	...	...	...	...	1.17
35-35.9	...	...	...	...	...	...	...	1.34	...	...	...	1.24	...	1.23	1.14	1.20	...	...	...	...	...	1.21
36-36.9	...	...	...	...	...	...	...	1.39	...	...	...	1.28	...	1.27	1.18	1.23	...	...	...	...	...	1.25
37-37.9	...	...	...	...	...	...	...	1.44	...	...	...	1.33	...	1.31	1.22	1.26	...	...	...	...	...	1.29
38-38.9	...	...	...	...	...	...	...	1.49	...	...	...	1.37	...	1.36	1.25	1.30	...	...	...	...	...	1.33
39-39.9	...	...	...	...	...	...	...	1.54	...	...	...	1.42	...	...	1.29	1.34	...	...	...	...	...	1.38
40-40.9	...	...	...	...	...	...	...	1.59	...	...	...	1.46	...	...	1.33	1.37	...	...	...	...	...	...
41-41.9	...	...	...	...	...	...	...	...	...	...	...	1.50	...	...	1.37	1.40	...	...	...	...	...	...
42-42.9	...	...	...	...	...	...	...	...	...	...	...	1.54	...	...	1.41	1.44	...	...	...	...	...	...
43-43.9	...	...	...	...	...	...	...	...	...	...	...	1.59	...	...	1.45	1.47	...	...	...	...	...	...
44-44.9	...	...	...	...	...	...	...	...	...	...	...	1.63	...	...	1.49	1.51	...	...	...	...	...	...
45-45.9	...	...	...	...	...	...	...	...	...	...	...	1.67	...	...	1.53	1.54	...	...	...	...	...	...
46-46.9	...	...	...	...	...	...	...	...	...	...	...	1.71	...	...	1.57	1.57	...	...	...	...	...	...
47-47.9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1.61	...	...	...	...	...	...	...
48-48.9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1.64	...	...	...	...	...	...	...

For Newhall, McKittrick, Kern River, Round Mountain and Kern Front crude, Standard posts 60 cents per barrel for all grades. For Elwood Terrace crude (free on board ship), 33-33.9, $1.21, with 4 cents added for each degree up to and including 37° and over at $1.37; Wheeler Ridge crude, 19 to 21.9°, 60 cents; 22-22.9, 63 cents; 23-23.9, 67 cents; 24-24.9, 71 cents; 25° and over, 75 cents. On May 18, Union Oil Co. adopted Standard of California prices in all fields in which they both purchase.

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1940 High	1940 Low	Week ended July 27 High	Week ended July 27 Low	Week ended July 27 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1939	Com. sh. earn. 1939	Com. sh. earn. 1938	1939 High	1939 Low	1938 High	1938 Low
58½	38½	41¼	41	41	Amerada Corp.	788,675	N.P.	50cQ	4-30-40	$2.00	$1.56	$2.07	74½	50	78	55
27⅛	18¼	21¼	20½	20¾	Atlantic Refining	2,663,999	$25	25cQ	6-15-40	1.00	1.66	1.40	24¾	18⅛	27⅜	17¾
16⅝	8½	10⅝	9⅝	9⅝	Barber Asphalt Co.	390,223	$10	25c	5-21-40	.25	1.39	—.85	21	10¼	23¾	12⅛
13⅜	7⅛	8⅛	7¾	8⅛	Barnsdall Oil Co.	2,558,779	$5	15c	6-8-40	.90	.76	1.26	19½	11⅛	21⅜	10⅛
8⅛	5½	6⅜	6¼	6¼	Consolidated Oil Corp.	13,751,726	N.P.	20cQ	8-15-40	.80	.55	.55	9⅞	6½	10⅜	7
25	16⅛	19½	18¼	19⅛	Continental Oil of Delaware	4,682,572	$5	25cQ	3-25-40	1.00	1.35	1.10	31½	19⅞	35¾	21¼
6⅞	3⅜	4	3⅞	3⅞	Houston Oil	1,098,618	$25	....	10-17-30	....	.43	.83	9⅜	4½	9¾	5
14⅜	9	9¼	9	9⅛	Lion Oil Refining	435,815	N.P.	25cQ	4-20-40	1.00	1.50	2.09	18⅛	10	25⅛	15⅝
17⅝	11½	13	12¾	12¾	Mid-Continent Petroleum	1,857,912	$10	40c	6-1-40	.60	1.42	.56	18	11⅛	22⅝	12¼
11	7⅛	8	8	8	Mission Corporation	1,378,645	$10	40c	12-15-39	.65	.87	1.04	14⅞	8¾	17¾	10⅝
9¾	4⅝	6	5¾	5⅞	National Supply	1,155,517	$10	....	12-22-37	....	—.87	—.79	15½	5⅝	23	12½
8¾	5⅜	6⅛	5⅞	6	Ohio Oil Co.	6,563,377	N.P.	20c	6-15-40	....	—.10	.25	10½	6	14⅞	8⅞
8¼	5⅝	5⅝	5⅝	5⅝	Pacific Western Oil	1,000,000	N.P.	40c	12-19-39	.40	.81	1.22	11⅞	7	15⅞	10¼
10½	6¾	..	..	..	Pan American Pet. Trans.	4,702,945	$5	....	12-31-37	....	1.10	.08	8¾	5	9¼	6¼
41¾	27⅛	32⅜	31⅞	32	Phillips Petroleum	4,449,052	N.P.	50cQ	6-1-40	2.00	2.21	2.03	46½	31¼	44⅜	27¼
22¾	15	16½	16½	16½	Plymouth Oil Co.	1,038,633	$5	35cQ	3-30-40	§1.40	2.38	2.59	24	17⅛	25⅝	15
11½	7	7½	7¼	7⅜	Pure Oil Co.	3,982,031	N.P.	25c	12-20-39	.25	1.11	.38	11⅜	6⅛	13½	8¼
8⅜	6⅞	8	7⅞	7⅞	Richfield Oil Corp.	4,010,000	N.P.	50c	12-18-39	.50	.65	.51	10¼	6⅝	9⅞	5
20	11	13	13	13	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	6-15-40	1.00	1.40	1.52	24⅜	15½	27½	15½
13⅛	7⅝	8½	8⅜	8½	Shell Union Oil	13,070,625	N.P.	25c	12-20-39	.50	.77	.72	17¼	9⅞	18⅜	10
23¼	12¼	15¼	14⅜	14¾	Skelly Oil	995,349	$15	25c	1-30-40	.75	1.99	2.27	29½	15½	34⅜	18½
12½	7⅛	8¾	8⅜	8½	Socony-Vacuum	31,206,071	$15	25cSA	3-15-40	.50	1.10	1.29	15⅛	10¼	16⅜	10⅜
26⅛	17⅜	18½	18	18⅛	Standard Oil of California	13,003,953	N.P.	25cQ	3-15-40	1.10	1.38	2.22	33⅝	24¼	34⅞	25⅛
29	20¾	24⅞	24	24⅜	Standard Oil (Indiana)	15,272,020	$25	25c	6-15-40	1.25	2.23	1.82	30	22⅜	35½	24¾
46½	29⅞	34½	33	33½	Standard Oil of New Jersey	27,280,998	$25	1.00†	6-15-40	1.25	3.26	2.86	53½	38	58⅜	39¾
65⅞	47	49	48¾	48¾	Sun Oil	2,434,863	N.P.	25c*	6-15-40	1.00	2.74	1.07	66	45¾	65½	45
2½	1¼	1½	1¼	1¼	Superior Oil Corp.	1,388,979	$1	10c	12-28-38	....	.04	.24	3⅝	1¾	4¼	1¾
47⅝	33	39⅜	38¼	39⅜	Texas Corp.	10,876,139	$25	50cQ	4-1-40	2.00	3.02	2.13	50⅜	32½	49⅝	32⅝
4¼	2½	2¾	2⅝	2¾	Texas Gulf Producing Co.	888,146	N.P.	10c	6-15-40	.20	.69	.86	5¾	3¼	5⅞	2⅝
8⅝	5½	6⅜	5⅞	6⅜	Texas Pacific Coal & Oil	888,236	$10	10c	6-1-40	.40	1.00	1.16	11⅜	7	12½	7
12	8¾	9⅛	9	9	Tide Water Associated	6,371,827	$10	25c	6-1-40	.80	1.05	1.28	14¼	9½	15¾	10⅛
17½	12	12⅝	12½	12½	Union Oil Co. of California	4,666,270	$25	25c	5-10-40	1.05	1.25	1.47	19¾	15⅛	22½	17⅛
29⅞	22¾	26¼	26¼	26¼	Union Tank Car Co.	1,177,381	N.P.	45c	6-1-40	1.30	2.07	1.16	24¼	20⅛	23½	20
3⅝	1⅞	..	..	..	Wilcox Oil & Gas	470,768	$5	10c	2-15-40	...	.77	.52	4¼	2⅜	3½	1⅝

*Also 5 per cent in stock. †Includes extras. ‡Also 2 per cent in stock. §Also 4 per cent in stock. ‖Also 2½ per cent in stock. ¶Also 1½ per cent in stock. —Deficit.

New York Curb Exchange

1940 High	1940 Low	Week ended July 27 High	Week ended July 27 Low	Week ended July 27 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1939	Com. sh. earn. 1939	Com. sh. earn. 1938	1939 High	1939 Low	1938 High	1938 Low
10¾	5	5⅝	5⅜	5½	American Republics Corp.	1,308.049	$10	10c	7-11-38	....	$0.14	—.22	11⅜	5½	11⅜	5
3¼	1⅜	1¾	1¾	1¾	Bridgeport Machine Co.	263,700	N.P.	$1.25	12-30-37	....	—.95	—.14	7¼	2½	10¼	4⅞
43	28	37	37	37	Buckeye Pipe Line Co.	200,000	$50	$1	6-15-40	$2.50	3.13	2.36	34¾	26½	39	22½
117	95	100½	97	97	Chesebrough Mfg. Co.	120.000	$25	$1.50Q†	6-24-40	6.00	7.87	5.32	130	108⅝	128	97
6¾	4	5⅞	5½	5¾	Cities Service (new)	3,703,978	$10	...	6-1-32	....	.68	.23	9¼	4¼	11	5⅛
2⅛	1⅛	..	..	..	Cosden Petroleum	465,332	$1	...	.....	....	....	....	2¼	½	2⅜	⅞
24¼	13	13½	13	13¼	Creole Petroleum	6,974,356	$5	50cSA†	6-15-40	1.00	1.38	1.64	28	16¾	27½	17½
4⅜	2⅞	3	3	3	Darby Petroleum	351,390	$5	25cSA	1-15-39	.25	.03	.69	7⅛	3⅝	10¼	5½
2	1¼	1⅜	1⅜	1⅜	Derby Oil & Refining	263,162	N.P.	....	.....	....	—.37	—.91	2⅝	1½	3½	1½
31	23½	..	..	..	Eureka Pipe Line	50.000	$50	75c	5-1-40	2.00	.63	—.37	23	15⅛	31	16
39⅞	25⅛	29¾	29¼	29¼	Gulf Oil Corp.	9,076,202	$25	25cQ	7-1-40	2.00	1.69	1.43	45⅛	29¼	46⅞	33
68	47⅛	54½	52¾	54½	Humble Oil & Refining	8,987.840	N.P.	62½c	7-1-40	2.00	3.33	3.98	71	52½	72⅝	56
12⅜	5½	6⅞	6⅛	6¼	Imperial Oil of Canada	26,965,078	N.P.	37½c†	6-1-40	1.00	.71	.96	17	11⅜	19½	14⅛
7¾	3⅝	..	..	..	Indiana Pipe Line	300,000	$7.50	10c	5-15-40	.50	.33	.47	7¼	5½	9⅜	6
19¾	8¼	9⅜	9	9⅜	International Petroleum	14,324,088	N.P.	75c	6-1-40	1.75	1.19	1.98	27½	17	31¼	21
2¾	1⅝	1¾	1¾	1¾	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	...	.06	.14	3¾	2⅛	5	2⅛
10¾	7⅝	8⅞	8⅞	8⅞	Lone Star Gas	5,518,347	N.P.	20c	4-22-40	.70	.98	.88	10½	7⅛	10⅜	6⅝
6¼	3¾	4⅝	4⅝	4⅝	Louisiana Land & Exp.	2,966,762	$1	10c	6-15-40	.35	.22	.45	7¾	4	9⅜	6½
17	14½	..	..	..	Margay Oil Corp.	149,943	N.P.	25cQ	7-10-40	1.00	1.52	2.28	17	14½	24	16
8½	6½	7	6¾	7	Midwest Oil Co.	998,474	$10	45c	6-15-40	.90	.99	.93	8¾	6⅝	9¾	6⅝
6¼	4⅞	5¼	5	5⅛	Mountain Producers	1,593,584	$10	30cSA	6-15-40	.60	.70	.62	6	4⅞	5⅜	4½
13⅛	10	10⅞	10⅝	10¾	National Fuel Gas	3,810,183	N.P.	25cQ	4-15-40	1.00	.95	.84	14	11¼	14⅝	11½
12½	8¾	10	9⅞	10	National Transit	509,000	$12.50	50c	6-15-40	.85	.91	.88	9½	7¼	9¼	6½
1¼	⅞	..	..	..	New Mexico and Arizona	1,000,000	$1	1c	12-1-37	..	.02	.02	1⅝	1	2⅝	1½
7¾	5⅝	..	..	..	New York Transit	100,000	$5	25c	4-15-40	.40	.88	.16	6	4	4½	3½
9⅞	6	6¾	6¾	6¾	Northern Pipe Line	120,000	$10	40c	6-1-40	.30	.31	.24	7	4½	6	4
5½	2½	3⅛	3	3⅛	Pantepec Oil	2,856,872	$1	...	.....	....	....	....	7⅝	4	7¾	3½
3¼	1½	..	..	..	Root Petroleum Co.	336.045	$1	25c	2-1-37	....	.70	.17	5	1¼	4½	1⅝
2½	1½	..	..	..	Ryan Consolidated	298,931	N.P.	....	.....	....	.16	.29	3	1⅞	4	2⅛
11¾	4⅞	7½	7¼	7¼	Southern Pipe Line	100,000	$10	15c	3-1-40	.30	.25	—.27	4⅞	3½	5⅜	3¼
44	28	33½	33	33	South Penn Oil	1,000,000	$25	37½c	6-28-40	3.00	2.84	1.44	40½	26¾	39	28¾
35	22	..	..	..	Southwest Penna. Pipe Lines	35.000	$50	50c	7-1-40	2.00	2.06	—.41	23	18	22¼	16½
20⅞	16½	18⅛	18⅛	18⅛	Standard Oil of Kentucky	2.604.790	$10	25c	6-15-40	1.30	1.53	1.45	20⅛	17¼	18¾	15
41¾	26¼	34	31⅝	34	Standard Oil of Ohio	753,740	$25	25c	6-15-40	1.50	6.64	1.81	32¾	17	22⅜	16¼
2	1⅜	1½	1½	1½	Sunray Oil	1,975.876	$1	5c	5-1-40	.10	.25	.23	2¾	1⅜	3¼	2
2¾	2	2½	2½	2½	Texon Oil & Land	936.024	$2	10c	3-29-40	.10	.49	.56	4	2⅝	5¼	3½
3⅜	2	2¼	2¼	2¼	Transwestern Oil Co.	750,000	$10	....	.....	....	—1.42	—.12	6	2½	7⅝	4¼
2⅛	‖	1⅜	1¼	1¼	United Gas Corp.	7,818,959	$1	....	.....	....	—.55	—.51	3⅜	1½	5¼	2⅝

†Includes extras. —Deficit.

EQUIPMENT PROGRESS...

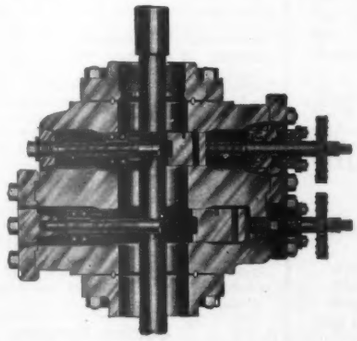
National Tank Installs New X-Ray Equipment

For quicker, better service to the oil industry, National Tank Co. has installed in its Tulsa plant, a modern X-ray machine capable of penetrating and photographing heavy steel plate. The unit, one of the most powerful in the Southwest, and one of two in Oklahoma, operates at a peak capacity of 220,000 volts. X-ray equipment is being used in industrial plants for testing welded seams, permitting visual inspection for the elimination of flaws in the welding of pressure vessels. A.S.M.E. construction codes require the use of X-ray in the inspection of vessels for certain uses, such as storage of lethal gases; X-ray for welded boiler drums are also required. National Tank Co. states that the installation of this equipment enables it to furnish pressure vessels for almost every purpose.

National Tank Co. new X-ray machine

Shaffer Double Cellar Gate Affords Entire Control of Drilling Well

A double cellar control gate designed by Shaffer Tool Works, Brea, Calif., is for use where the vertical space available is so small that it is desired to save some of the room required for two single gates and the connecting spool between. The two-ram compartments



are constructed with the upper compartment having rams to close around the pipe and the lower compartment equipped with rams for a complete shutoff when the pipe is out of the hole. The vertical space required by the double gate is approximately half that required for two single gates and their connecting spool. The double gate itself is less in height than two single gates alone.

The rams in the upper compartment are self-centering and they center small drill pipe in the bore of the gate as they close around it. They are made with protruding angular guide alternately top and bottom and as the rams move toward their closed position these guides engage the drill pipe and move it into central position in the ram. The angular guides telescope into the opposite ram block, which permits the abutting faces of the ram blocks to seal perfectly.

TRADE LITERATURE

GENERAL ELECTRIC CO., Schenectady, N. Y.—Bulletin on Flamenol, a synthetic-insulated wire or cable with a single covering that serves the dual purposes of an insulation and a finish.

COCHRANE CORP., Seventeenth Street and Allegheny Avenue, Philadelphia, Pa.—Publication 2975, Cochrane Decarbonator for degasification.

BUCKEYE TRACTION DITCHER CO., Findlay, Ohio.—Bulletin 46, giving specifications on its Model 12A rotary-wheel type trenching machine, which cuts trench up to 26 in. wide and up to 5.5 ft. deep.

LINK-BELT CO., 307 Michigan Ave., Chicago.—Booklet 1750, on Promal castings, giving complete technical data and showing how Promal is being successfully used for cast elevating, conveying and power transmitting chains and other industrial uses.

YARNALL-WARING CO., Chestnut Hill, Philadelphia, Pa.—Revised edition of 16-page bulletin, EJ-1907, Yarway Gun-Pakt expansion joints; also 16-page bulletin, T-1735, Yarway impulse steam trap.

Davis Joins Bovaird as Sales Manager at Hays, Kans.

Appointment of Don L. Davis as sales representative at Hays, Kans., has been announced by Bovaird Supply Co. Mr. Davis is a practical supply man with a background of a number of years' experience with supply companies and a major oil company. He began his business career in 1925 with the Jarecki Manufacturing Co. at Augusta, Kans. In 1927 he started work for Pure Oil Co. at El Dorado, Ark. After being with Pure for 5 years in Tulsa, Chicago, and Houston, he left this company to join the sales staff of the General Machine & Tool Co., at Wichita, and at the time of his resignation was assistant general manager. He was associated with General Machine for 8 years. Mr. Davis will work out of Bovaird's Russell, Kans., store, but will reside in Hays and make it his headquarters.

New Map of Eastern Area

A new map of the eastern area has been prepared showing oil fields in green, gas fields in red, and all new discoveries for 1937-40 in yellow. The map covers the following states: Illinois, Indiana, Michigan, Ohio, New York, Pennsylvania, West Virginia, Kentucky, and Tennessee. State indexes giving official field names and location on map. Size of the map is 54 by 60 in., and the scale is 1 in. equals 16 miles. The map is available from E. C. Jacobson, McBirney Building, Tulsa.

BUSINESS NOTES

C. H. (Rick) Monnette representative for Imperial Belting Co. in Oklahoma, Texas, Arkansas, and Louisiana, has been appointed assistant sales manager and transferred to Chicago.

Mid-Continent Holds Open House At New Houston, Tex., Offices

Mid-Continent Supply Co. will play host to hundreds of its friends in Houston, Tex., Thursday night, August 1, at the open house for its new air-conditioned offices. In anticipation of the growth of business in the Bay area, the two-story building was erected on a foundation which later will permit the addition of two more stories. With permanency and facility of handling oil-well supplies in mind, Mid-Continent incorporated many unique features in the building, located at 6220 Navigation Boulevard.

Big doors leading from the offices to the warehouse were planned to permit the skidding in of the large pump jacks, engines and other machinery. Speed in handling heavy supplies is facilitated by the design of the loading dock and by the improved crane equipment. The modern building is so constructed that the noise and vibration from the warehouse at the rear are not transmitted into the offices or showroom.

K. W. Davis *J. A. Daugherty* *Don H. Thornbury*

Pres. K. W. Davis of Fort Worth, Tex., will be assisted in welcoming the crowd by Don H. Thornbury of Houston, and J. A. Daugherty of Tulsa, vice presidents, and F. J. Spurlock, sales manager, as well as members of the local staff. Visitors will be entertained with music, and barbecue and refreshments will be served.

Airco Announces Appointment Of Salisbury

Howard R. Salisbury has been appointed manager of the Air Reduction Co. at Philadelphia, Pa. Mr. Salisbury has been connected with Airco for 15 years. He was manager of Airco at Bettendorf, Iowa, for 2 years and assistant manager at Philadelphia for the past 6 years. He is also a past chairman of the Philadelphia section of the American Welding Society. He succeeds William W. Barnes, retired, while H. B. Seydel, formerly assistant sales manager of the New York district, has been appointed assistant manager at Philadelphia.

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Leases and Drilling Blocks

LEASES—East Texas, La., South Ark. 20 acres up, dollar acre up.—Owners—Address Attorney, Box 1122, Little Rock, Ark.

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A complete SERVICE. EXPERTS in every department of the Oil Business at your SERVICE; a REAL SET-UP. The best opportunity ever offered you. Leases in large or small lots at
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Write today and get started right.
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Santa Fe, New Mexico

CRANE-WARD County 20 ac. cheap in fee, under Magnolia lease. J. G. SMITH, 215 Littlefield Bldg., Austin, Texas.

CRANE CO., oil possibilities, cheap fee land, 3 mi. E Ward Gulf-Western drilling. J. G. Smith, 215 Littlefield Building, Austin, Texas.

SPECIALIZED Geophysical investigations conducted for petroleum promise. In touch with many opportunities to and for development of drilling blocks. P. O. Box 364, Fort Worth, Texas.

MINING CREEDE COLORADO
Are you interested in mining then write Norman Alspaugh, Creede, Colorado, and learn what the famous oil mining camp of Creede has to offer in the mining industry.

FOR SALE Oil and gas leases and small production located in Kentucky shallow field, also tracts of proven Fluorspar and zinc deposits. Reports on request. W. P. HARLEY, Bowling Green, Kentucky.

FOR SALE—Oil and Gas Lease covering 340 acres in Sections 2, 3 and 9, Township 7 South, Range 5, Hamilton County, Illinois, five-year lease $1.00 an acre rental. Write George W. Hogan, Jr., McLeansboro, Illinois.

PRODUCING Gas or Oil wells bought Will finance drlg. proven land. Describe fully. Col. Gas, 305 W 8th St., L. A. Calif.

SACRIFICE undrilled royalties in Texas, land in fee in Oklahoma. Write Sta. A, Box 111, St. Petersburg, Fla.

SEVERAL 10 to 40-acre leases short distance northeast Mentone field, in trend of production towards the Winkler field, $10 per acre for quick deal, 10 years to run with 50c annual rental. E. L. Stratton, Pecos, Texas.

WANT Broker able to handle Big Block on good structure in Southeast Arkansas. Block completely assembled, ready now. Excellent Geology and all contour maps. Write Box K-713, The Oil and Gas Journal, Tulsa, Oklahoma.

Leases and Drilling Blocks

NEW MEXICO
STATE OIL AND GAS LEASES
40 acres and multiples thereof. In the Hot Spots. Buy direct. Save those dollars. No middle man to pay; no salesman to bother you! Twenty years in the business without a complaint. Write for information.
HARRY S. WRIGHT
New Mexico State Lessee
Wright Bldg., Farmington, New Mexico

NEW MEXICO
Oil and Gas Leases and Royalties.
ROY G. BARTON, Hobbs, N. M.

PRODUCTION. Am interested in production offered worth the money. E. B. Reeves, Alanreed, Texas.

HAVE 290 A. proven Gas Lease. Can Drill well for $3000. Want partner to split cost of well. Box 93, Tulsa, Oklahoma.

FOR LEASE—For oil and gas purposes 240 acres of land in Anderson County, Kansas. Oil and gas was found at a shallow depth. Owner—W. M. Dary, 3605 East Anaheim, Long Beach, Calif.

FOREST CITY BASIN: Northeast Kansas Sector. Leases and Drilling Blocks, near most promising wildcat. I maintain my own field men and offer the very best buys in the area. P. O. Box 345, Lawrence, Kansas.

DRILLING BLOCK 10,000 acres Huerfano County, Colo. new field offers great opportunities. Heavy wet gas, shallow and deep oil stratas. Want operators for part or whole development. No proration. Have bottom hole money, or sell or arrange percentage leases. S. W. Pressey, Box 614. Pueblo. Colo.

EAST Texas oil leases. $2.00 acre. Near test and large Co. holdings. L. Lahm, 2931 Missouri Ave., St. Louis, Missouri.

WELL LOGS. Drillers' logs of approximately 4,000 wells drilled in New Mexico are available from Well Log Division, New Mexico Bureau of Mines & Mineral Resources, Socorro, New Mexico. Write for price list C.

WATER FLOODING proven Successful; Why wildcat when positive results can be guaranteed. Have 320 acres with 22 wells fully equipped, 360 feet to sand. Two powers, tanks and pipe line connections. Water and Gas on lease. Cheap. Write H. B. Snyder, Box 126, Ottawa, Kansas.

Financing

JOHN MORRIS, Box 5411, Philadelphia, studied records 5000 financial houses. Found only 191 buy new issues. $4.00.

Situations Wanted

REFINERY EXECUTIVE thoroughly trained and experienced in design construction and operation of refineries and the manufacture of all products. Efficient, energetic, diplomatic. Desires permanent connection or design construction and operation on partnership basis. Now employed. Box K-675, The Oil and Gas Journal. Tulsa, Oklahoma.

ACCOUNTANT - AUDITOR, employed, thoroughly experienced in taxes and all phases of oil work, desires connection with good organization where opportunity for advancement exists. For exchange of correspondence write Box K-714, The Oil and Gas Journal, Tulsa, Okla.

CONSTRUCTION superintendent. Eight years' experience construction and maintenance work in oil refinery: Ten years as superintendent on road for construction engineering companies, building from one unit to large sized jobs, familiar with brick, concrete and steel construction. Pipe work from vacuum to high pressure. Can read blueprints and go anywhere. Box K-720, The Oil and Gas Journal, Tulsa. Okla.

Help Wanted

DESIRE to contact rotary drillers who worked in Wyoming prior to 1929. Address P. O. Box 2603, Tulsa, Oklahoma.

WANTED by Mid-Continent Refinery, Engineering draftsman capable of handling detail and design of reinforced concrete, structural steel, furnaces, stacks, pressure vessels, heat exchangers, condensers, coolers, and process piping. Send full particulars first letter on age, education, experience, salary expected, references, and include a recent photograph. Good for six months to twelve months work and possibility of permanence. Box K-712, The Oil and Gas Journal, Tulsa, Okla.

SUPPLY Company wants young engineer for pump sales, Tulsa area. Some experience necessary. Box K-721, The Oil and Gas Journal, Tulsa, Okla.

WANTED: Refinery Superintendent capable taking full charge 5000-bbl. plant located New Orleans. State full qualifications, indicating salary expected. Box 505, New Orleans, La.

Warehouse Facilities

WAREHOUSE space, 1,000 square feet or part, with desk, phone and shipping service.

LARKIN PACKER CO.
Tulsa, Okla.

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ANDREW J. BARRETT
The Philtower
Tulsa, Oklahoma

Brokers—Salesmen

Sell in the most active area in the United States—The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. All offerings meet the requirements of the Security and Exchange Commission. Inquiries invited.

B. D. BUCKLEY
Paul Brown Bldg., St. Louis, Mo.

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Registered with S. E. C.
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Ramsey Tower, Oklahoma City, Okla.

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Immediate Action.
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For Sale—Maps

R. B. ROBINSON MAPS
Jackson, Miss. 3-Hart Bldg., Across Street from Heidelberg Hotel. Ownership maps All Over Mississippi.

1940 OIL AND GAS FIELD MAP
Texas, Eastern New M. Price $1.00.
Wildcat Map $3.00 Published monthly.
ZINGERY OIL MAP CO., Fort Worth, Tex.

Geophysical Service

HOMER L. FITCH, GEOPHYSICIST AND LOCATION ENGINEER
WHY drill dry holes? Our method only locates structures which contain oil or gas. Locations made by us will produce or no pay. Drawer 711, Brownsville, Texas.

MAJORS — INDEPENDENTS — WILDCATTERS—When you drill for Oil and Gas wouldn't you like to be sure? The Gravitational Selector works quickly, scientifically, satisfactorily or there is no charge. If you are satisfied pay us from production. Regardless of how you have located your wells heretofore we believe we can give you additional safeguards ahead of the drill. For particulars write Gravitational Selector, 14957 Lakewood Heights Boulevard, Lakewood, Ohio.

Mailing Lists

ROYALTY owners, Oil investors, Unit holders, Stockholders in Oil and Royalty Companies. Personnel lists of every branch of oil industry. All by States. We buy lists. New catalogues ready. Oil Industry Mailing List Co., Tulsa Loan Bldg., Tulsa, Oklahoma.

Survey Service

REMEMBER EAST TEXAS
When all other methods fail, employ my divining or dowsing method. If oil exists this method finds it. Faults, broken treacherous areas accurately defined. Our Watson #2, first producer Wilmington, Calif. field, located by this method. More reliable than mechanical geophysics. Ask any unbiased oil authority. Many years' experience. A wise man investigates. George Miller, 1548 Post, Torrance, California.

CLASSIFIED ADVERTISING RATES

Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgment is made, and proofs cannot be shown in advance of publication.

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5 Lines	1.75	3.00	4.25	5.50	9 Lines	3.15	5.40	7.65	9.90
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1 Inch	26 times	4.00 per inch
1 Inch	52 times	3.50 per inch

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

CLASSIFIED ADVERTISING

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

Legal Blanks

BURKHART'S legal blanks and general forms serving Mid-Cont. oil field since 1908—Okla. Kans. N. Mex. Tex. Ala. Ark. Fla. Ga. Ill. Ind. Ky. La. Mich. Miss. Mo. Neb. N. Dak. Tenn. Wyo. Free catalog, samples on request. Burkhart Ptg. & Sta. Co. 115 S. Cinn. Tulsa, Oklahoma.

Equipment Wanted

WANTED One used gas engine booster capable handling five million gas per day. Box 391, Borger, Texas.

WANTED small pipe machine capacity ¼" to 2" Landis preferred but Bignall & Keeler acceptable. State price, location, condition, etc. Donley Pipe & Supply Co., 3324 N. Broadway, St. Louis, Mo.

WANTED: 4x6 or 5x10 slush pump 2⅝ or 2⅞ drill rod or drill pipe, small rotary table, small swivel. Downey Welding & Machine Shop. Glendo, Wyoming.

Incorporations

DELAWARE CHARTERS: Complete service $35. Submitted forms. Chas. G. Guyer, Inc., Wilmington, Delaware.

CAPITAL SEEKERS
Put your project before 260 Key-Men. Cost trifling. Details free. AMSTER LEONARD, Fox Theater Building, Detroit, Michigan.

For Sale—Equipment

FOR SALE: 5000 ft. No. 1 line pipe, T&C, 55c per ft., f.o.b. St. Louis. Will deliver to any point in Oklahoma or Texas within 1000 miles of St. Louis, for 10c per ft. Valley Steel Products Co., St. Louis, Mo.

4,000' of 8¼"—32 lb. lapweld casing.
3,200' of 7"—24 lb. lapweld casing.
1,100' of 4"—16.60 lb. seamless drill pipe.
P. O. Box 1360. Phone 312, Seminole, Okla.

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine-Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air compressor. Six-inch Oster Pipe Threading Machine. Also large stock of lathes, pipe machines, milling machines, etc. Send for our list.

Terms to suit.

CINCINNATI MACHINERY & SUPPLY CO.
26 West 2nd St., Cincinnati, Ohio

FOR SALE: At Oklahoma City, 1 Muskogee Model "B" skid type well service machine with PA-100 International Motor. I. T. I. O. Company, Bartlesville, Okla.

45-C STAR SPUDDER priced to sell excellent condition; mounted dual tires; 8 inch "A" Pole Mast PA100 International Engine. Located Butler County, Kansas. P.O. Box 135, Eldorado, Kansas. Phone 208.

FOR SALE—One 17x10 Class O-CSD Chicago Pneumatic compressor having compound duplex steam and single stage air cylinders. Cities Service Oil Company, Bartlesville, Oklahoma.

FOR SALE—Small Tool Joint Specialty Business manufacturing article used everywhere. For further details write Box K-711, The Oil and Gas Journal, Tulsa, Oklahoma.

FOR SALE—Two steam driven 24x12½ x24 Dow surge type horizontal duplex double acting hot oil pumps. Cities Service Oil Co., Bartlesville, Okla.

STORAGE tanks, pumps, compressors, Griscom-Russell bentube sections, condensers, stills, portable steel buildings, pipe and fittings direct from gasoline plants now being dismantled. Box K-677, The Oil and Gas Journal, Tulsa, Oklahoma.

FOR SALE—Western Kansas, 40 H.P. O.C.S. "Bat" pumping units and 40 H.P. vertical Webber oil or gas engines. Cities Service Oil Company, Bartlesville, Oklahoma.

TRACTORS
Caterpillars, crawler type, size "35," $375; size "65" with nigger-head winch $750; Caterpillar RD8 with bulldozer $2000; Allis-Chalmers Model L with bulldozer $1750. Guaranteed, slightly used. O. C. Evans, Mt. Sterling, Ky.

FOR SALE: 7 ft. x 20 ft. Butane welded storage tanks 125# WP, capacity 6000 gallons. I.T.I.O. Co., Bartlesville, Okla.

For Sale—Equipment **For Sale—Equipment** **For Sale—Equipment**

REFINERY EQUIPMENT—PRESSURE VESSELS—VALVES & FITTINGS

Liquidating entire Barnsdall Refinery—Okmulgee, Okla.

Latest inventories now available
If you have not received yours, please
Send us your mailing address.

SONKEN-GALAMBA SUPPLY COMPANY

W. C. Berry and H. J. Galamba
Riverview at Second, Kansas City, Kansas

Robt. W. Duden
2100 S. Union, Tulsa, Oklahoma

FOR SALE

One gasoline drilling rig with two 85 H.P. Waukesha motors and unitized draw works complete.

10,000 Ft. 2½" seamless tubing, used in flowing wells only.

10,000 Ft. 7" O.D. 26# seamless casing, once run.

15,000 Ft. 4½" O.D. seamless drill pipe equipped with both regular and full hole tool joints.

In addition to the above we have 20,000 Ft. screw line pipe in Oklahoma; also drilling rig capable of drilling to 6500 feet, complete stock of line pipe, casing, drilling and pumping equipment.

Wire, Write or Phone for Prices.

Louisiana Iron & Supply Co.
Shreveport, La.

Gulf Coast Markets

(Continued from Page 87)

line in drums. It then was reported that loading for Great Britain would be permitted to move. While it was indicated that export movement of oil would not be prohibited entirely, applications for tanker charters for moving the gasoline must be passed upon individually by the Maritime Commission and the State Department. No reasons were given for the action but it is assumed among Gulf Coast refiners that an attempt will be made to prevent export shipment in excess of that deemed detrimental to the Government's program of self-defense.

Total purchases of aviation gasoline in the recent trading on the Gulf Coast were reported at from four to six cargoes of bulk material and approximately 160,000 drums (50's). This was to be taken out as rapidly as ships were available and could be loaded. At least four refiners figured in the sale, one at Corpus Christi, one at Houston, another at Texas City, and the fourth at Port Arthur. While the reported price of around 6¼ cents was considered much below the market, the sales were looked upon as providing a profit and were expected to provide a little relief for some of the overcrowded storage, and indirectly prove of benefit to the general gasoline market.

Failure to move the material leaves the market unsettled, especially in view of the prospect that the already curtailed export markets may be further restricted by the Government.

Gulf Coast refinery markets, however, so far as the price situation is concerned, continued unchanged. There is no evident trend either for the better or for the worse, except that a situation has arisen in which there is very little market value discrimination between any of the products. In price per gallon, gasolines of all except aviation grades, and kerosenes are quoted closely around 4 cents and even gas oil is not much more than a half cent under that. Domestic movement of gasoline on contracts still is holding up in substantial volume, but this is not sufficient to instill any firmness to offset the continued lack of new business. There apparently is no attempt to undersell the present quotations but at the same time there is nothing to indicate there will be any move upward.

Kansas Fields

(Continued from Page 81)

Show heavy oil 657-62 ft., show oil in Squirrel sand 720 ft., show oil 816 ft., set 6-in. 1,100 ft., top Mississippi lime 1,105 ft., drilling 1,229 ft.

Ellsworth County

A. Billings, 1 Vanek . . . . . SW SW SE 25-14-10w
Anhydrite 455 ft., set 10-in. 1,658 ft., small show gas 2,020-27 ft., drilling 2,090 ft.

Cities Service, 1 Essick . . . . . NE NE NE 25-16-8w
Cemented 8-in. 225 ft., drilling 1,530 ft.

Marion County

Harrington & Loraiux, 1 Belton . . . SE SE NE 30-17-4
Kansas City 1,858 ft., 8-in. 1,880 ft., Mississippi lime 2,398 ft., pay 2,412-15 ft., T.D. 2,420 ft. Pumped 40 bbl. in 2 hours and 800 bbl. in 24 hours. Later pumped 5 bbl. fluid per hour, 50 per cent salt water. Cemented 6-in. at 2,405 ft., swabbed 200 bbl. oil and some water.

McPherson County

Broadwater, 1 Heaton . . . . . E½ SE SE 28-17-1w
Kansas City 2,125 ft., 8-in. 2,128 ft., Mississippi lime 2,706 ft., 7-in. 2,709 ft., hole full water 2,720 ft., base Mississippi lime 2,905 ft.. fishing 2,978 ft., T.D.

Imo, 1-A Eveleigh . . . . . EL SW NE 3-18-4w
Lansing 3,126 ft., slight show oil 3,177-83 ft., conglomerate 3,338 ft., Arbuckle 3,350-51 ft., cemented 7-in. 3,350 ft., rigging standard tools 3,351 ft.

Bay et al, 1 Coons . . . . . W½ SW SW 13-19-1w
Lansing 2,312 ft., Mississippi lime 2,896 ft., cemented 7-in. casing 2,906 ft., 2,028,000 cu. ft. gas and 1 bbl. water with slight show oil 2,939 ft., increase water, base Mississippian 3,135 ft., Viola 3,403 ft., T.D. 3,425 ft., P.B. to 2,922 ft., est. 4,000,000 cu. ft. gas with much water.

Pratt County

Herndon et al, 1 Montgomery . . . . . EL SW 13-27-13w
Topeka 3,245 ft., Lansing 3,761 ft., Mississippi lime 4,229 ft., Viola 4,278 ft., Simpson shale 4,321 ft., Simpson sand 4,330 ft., some saturation at 4,331-36 ft., drilling 4,365 ft.

Rooks County

Aylward Prod., 1 Richards . . . . . N½ NW SW 31-10-18w
Anhydrite 1,335 ft., drilling 1,615 ft.

Russell County

Pryor & Lockhart, 1 Davidson . . . E½ NE NW 12-15-11w
Florence 1,635 ft., Lansing 2,930 ft., 8-in. 2,940 ft. Cleaning out.

Stafford County

Stanolind, 1 R. C. Charles . . . . N½ NE SE 15-24-12w
Topeka 3,010 ft., Lansing 3,470 ft., show oil 3,586-91 ft., Viola 3,815 ft., show oil 3,827-50 ft., Simpson 3,935 ft., Arbuckle 3,994 ft., slight show oil 3,997½-4,001 ft., T.D. 4,021 ft., 3,000 ft. water in hole. P.B. to Viola.

KANSAS FIRST REPORTS

Barton County

Bradley Oil, 1 Dolechek . . . . . SE SE NE 13-16-12w

Barber County

Ohio, 1 Mary Bahr . . . . . S½ S½ NE 10-18-15w

Ellsworth County

L. H. Wentz, 1 Sevesta . . . . . N½ SE NW 6-16-10w
A. W. Ault et al, 1-A Schmidt B . . . SW SW NW 14-17-9w

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Central and Springrose, 1 Duvall . . N½ SE NE 13-20-6w

Reno County

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